zenith

SERVICE MANUAL

Product Type:	Presentation Series
Chassis:	CS
Manual Series:	SR24
Manual Part #:	923-03509
Model Line:	E
Product Year:	2002

Model Series:

H27E46DT
H27E46DT8
H32E46DT
H36E46DT

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PRODUCT SAFETY SERVICING GUIDELINES FOR AUDIO-VIDEO PRODUCTS

IMPORTANT SAFETY NOTICE

This manual was prepared for use only by properly trained audio-visual service technicians.

When servicing this product, under no circumstances should the original design be modified or altered without permission from Zenith Electronics Corporation. All components should be replaced only with types identical to those in the original circuit and their physical location, wiring and lead dress must conform to original layout upon completion of repairs.

Special components are also used to prevent x-radiation, shock and fire hazard. These components are indicated by the letter "x" included in their component designators and are required to maintain safe performance. No deviations are allowed without prior approval by Zenith Electronics Corporation.

Circuit diagrams may occasionally differ from the actual circuit used. This way, implementation of the latest safety and performance improvement changes into the set is not delayed until the new service literature is printed.

CAUTION: Do not attempt to modify this product in any way. Never perform customized installations without manufacturer's approval. Unauthorized modifications will not only void the warranty, but may lead to property damage or user injury.

Service work should be performed only after you are thoroughly familiar with these safety checks and servicing guidelines.

GRAPHIC SYMBOLS

The exclamation point within an equilateral triangle is intended to alert the service personnel to important safety information in the service literature.

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the service personnel to the presence of noninsulated "dangerous voltage" that may be of sufficient magnitude to constitute a risk of electric shock.

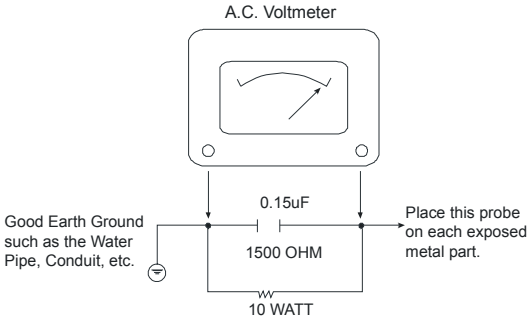
The pictorial representation of a fuse and its rating within an equilateral triangle is intended to convey to the service personnel the following fuse replacement caution notice:
CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ALL FUSES WITH THE SAME TYPE AND RATING AS MARKED NEAR EACH FUSE.

SERVICE INFORMATION

While servicing, use an isolation transformer for protection from AC line shock. After the original service problem has been corrected, make a check of the following:

FIRE AND SHOCK HAZARD

1. Be sure that all components are positioned to avoid a possibility of adjacent component shorts. This is especially important on items transported to and from the repair shop.
2. Verify that all protective devices such as insulators, barriers, covers, shields, strain reliefs, power supply cords, and other hardware have been reinstalled per the original design. Be sure that the safety purpose of the polarized line plug has not been defeated.
3. Soldering must be inspected to discover possible cold solder joints, solder splashes, or sharp solder points. Be certain to remove all loose foreign particles.
4. Check for physical evidence of damage or deterioration to parts and components, for frayed leads or damaged insulation (including the AC cord), and replace if necessary.
5. No lead or component should touch a receiving tube or a resistor rated at 1 watt or more. Lead tension around protruding metal surfaces must be avoided.
6. After re-assembly of the set, always perform an AC leakage test on all exposed metallic parts of the cabinet (the channel selector knobs, antenna terminals, handle and screws) to be sure that set is safe to operate without danger of electrical shock. DO NOT USE A LINE ISOLATION TRANSFORMER DURING THIS TEST. Use an AC voltmeter having 5000 ohms per volt or more sensitivity in the following manner: Connect a 1500 ohm, 10 watt resistor, paralleled by a .15 mfd 150V AC type capacitor between a known good earth ground water pipe, conduit, etc.) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1500 ohm resistor and .15 mfd capacitor. Reverse the AC plug by using a non-polarized adaptor and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.75 volts RMS. This corresponds to 0.5 milliamp AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.



X-RADIATION

1. Be sure procedures and instructions to all service personnel cover the subject of x-radiation. The only potential source of x-rays in current TV receivers is the picture tube. However, this tube does not emit x-rays when the HV is at the factory-specified level. The proper value is given in the applicable schematic. Operation at higher voltages may cause a failure of the picture tube or high-voltage supply and, under certain circumstances may produce radiation in excess of desirable levels.
2. Only factory-specified CRT anode connectors must be used.
3. It is essential that the service personnel have available an accurate and reliable high-voltage meter.
4. When the high-voltage circuitry is operating properly, there is no possibility of an x-radiation problem. Every time a color chassis is serviced, the brightness should be run up and down while monitoring the high voltage with a meter, to be certain that the high voltage does not exceed the specified value and that it is regulating correctly.
5. When troubleshooting and making test measurements in a product with a problem of excessively high voltage, avoid being unnecessarily close to the picture tube and the high voltage power supply. Do not operate the product longer than necessary to locate the cause of excessive voltage.
6. Refer to HV, B+, and shutdown adjustment procedures described in the appropriate schematics and diagrams (where used).

IMPLOSION

1. All direct view picture tubes are equipped with an integral implosion protection system; take care to avoid damage during installation.
2. Use only the recommended factory replacement tubes.

TIPS ON PROPER INSTALLATION

1. Never install any receiver in a closed-in recess, cubbyhole, or closely fitting shelf space over, or close to, a heat duct, or in the path of heated air flow.
2. Avoid conditions of high humidity such as: outdoor patio installations where dew is a factor, near steam radiators where steam leakage is a factor, etc.
3. Avoid placement where draperies may obstruct venting. The customer should also avoid the use of decorative scarves or other coverings that might obstruct ventilation.
4. Wall- and shelf-mounted installations using a commercial mounting kit must follow the factory-approved mounting instructions. A product mounted to a shelf or platform must retain its original feet (or the equivalent thickness in spacers) to provide adequate air flow across the bottom. Bolts or screws used for fasteners must not touch any parts or wiring. Perform leakage tests on customized installations.
5. Caution customers against mounting a product on a sloping shelf or in a tilted position, unless the receiver is properly secured.
6. A product on a roll-about cart should be stable in its mounting to the cart. Caution the customer on the hazards of trying to roll a cart with small casters across thresholds or deep pile carpets.
7. Caution customers against using a cart or stand that has not been listed by Underwriters Laboratories, Inc. for use with its specific model of television receiver or generically approved for use with TVs of the same or larger screen size.
8. Caution customers against using extension cords. Explain that a forest of extensions, sprouting from a single outlet, can lead to disastrous consequences to home and family.

X-RADIATION

To prevent possible exposure to radiation caused by excessive CRT Anode voltage, the CS Chassis incorporates a "High Voltage Shutdown" circuit. This circuit senses the level of flyback pulse from the "Flyback Transformer" representative of the actual high voltage on the CRT anode. When this level exceeds a predetermined voltage, the circuit shuts down the horizontal drive, preventing further generation of anode voltage. In this condition, the horizontal drive is "latched" off for about 5 seconds, after which, restart is attempted.

SHUTDOWN CIRCUIT OPERATION

The flyback pulse voltage from Pin 6 of TX3201 (Flyback Transformer) is peak detected (rectified) by the action of diode D3206 and capacitor C3214. This forms a DC voltage appearing on C3214 representative of the CRT anode voltage (HV) produced by T3201. This voltage is divided down by precision resistors RX3214, RX3215, RX3216 & RX3217. This lower voltage, appear on the non-inverted input (pin 5) of IC3201.

If the CRT anode voltage become excessive, pin 5 of IC3201 will be higher than inverted input of pin 6. This will cause the output of pin 7 to rise to approximately 15 volts. This signal (SD_DRV) is sent to the base of Q4000 causing Horizontal Drive to be disabled and latched, which causes the HV to shutdown. In about 5 seconds, the shutdown circuit resets (Pins 8, 9 & 14 of IC2900), the Horizontal Drive and HV will be reestablished. The circuit formed by Q2907, C2913, C2916, D2908, R2923, R2935, R2936, and R2937 disables the HV compensation output (Q2902-b signal) during turn on and shutdown conditions (transients).

CRT ANODE HIGH VOLTAGE MEASUREMENT PROCEDURE

Each CRT screen has it's own safe operating Anode Voltage and shutdown voltage. Critical Safety components (designated with an 'X' in the component designator) are designed to operate the CRT at a safe operating Anode voltage and provide proper shutdown thresholds. If replacement of any of these components is deemed necessary, it is important to use original type Zenith replacement components.

After a replacement is made, confirm proper Anode voltage using the following procedure.

Measurement of the CRT Anode voltage must be performed with no visible raster on the screen and operating at nominal horizontal scanning frequency 15.734 or 37.9 Khz (TV or SVGA signal).

After discharging the CRT, connect a high impedance high voltage meter to the CRT anode. Turn the television 'On' and confirm good signal is being displayed. Reduce Brightness and Contrast settings until the picture is well extinguished.

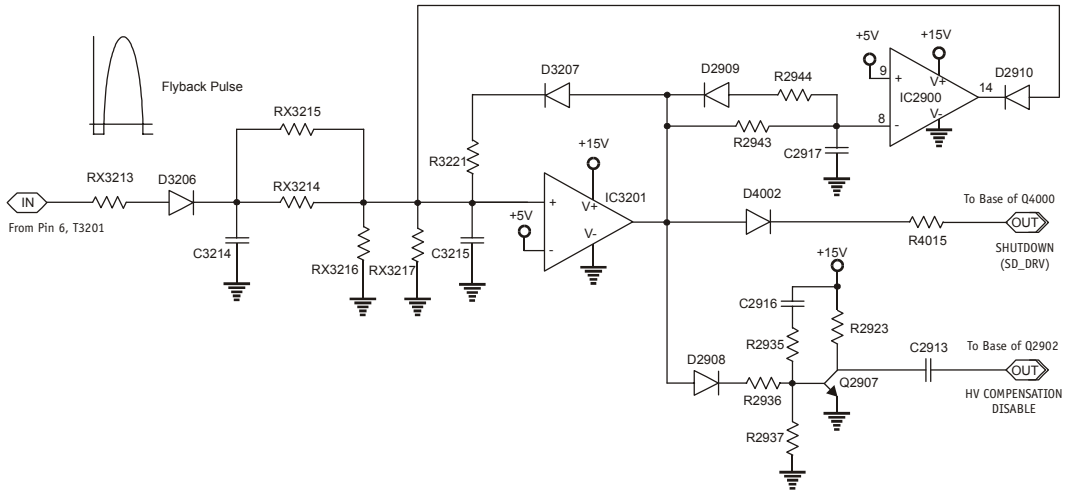
Observe the Anode voltage meter reading and compare with the table below for the proper CRT screen size. If the voltage reading is higher than the maximum, verify circuit component values and proper operation.

HV SHUTDOWN MEASUREMENT PROCEDURE

1. Adjust the beam current to 0 mA in NTSC mode.
2. Apply a variable DC voltage to pin 10 of the PTD1 connector, from 20 to 0 Vdc, starting at 20 Vdc.
3. Slowly decrease supply towards zero.
4. Remove DC voltage from pin 10 of PTD1.
5. After approximately 5 seconds, verify that the HV is reestablished (High Voltage Reset).

Screen Size	HV Nominal Level (kV)	HV Max Level (kV)
27"	27	29
32"	30	31.5
36"	30	31.5

SHUTDOWN SAFETY CIRCUIT



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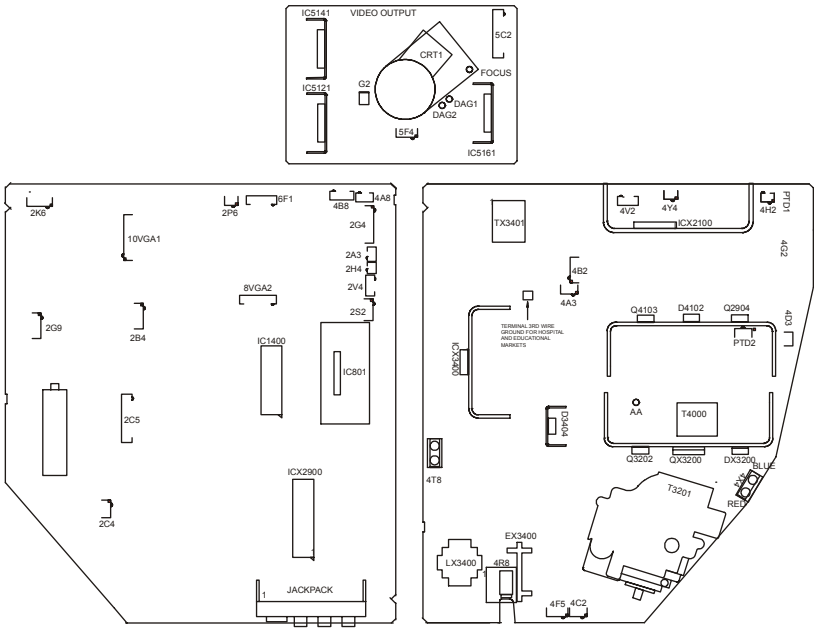
OVERVIEW



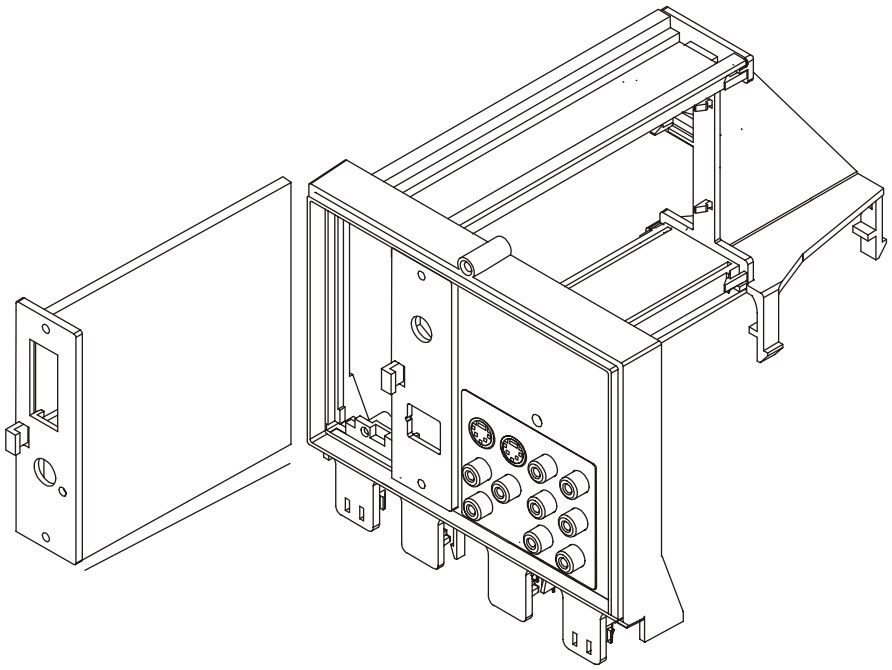
The CS series chassis will be used on the E-Line Commercial Products. The Presentation Series PC-to-TV monitor receivers were designed for educational and business applications. This manual covers 27, 32, and 36 inch screen sizes. The concept of this chassis is to make one main board for all models and one power supply board for all models in a particular screen size. Additional plug in boards with jack packs may be added to the chassis to accommodate the different features.

The CS series chassis features 11 IC's and 3 peripheral devices for all signal, sync and sweep processing. The ICX2200 handles the Base Band signal processing, the RGB processing, and video switching for 4 systems (HV sync signal processing included).

ICX2201 integrates the luminance signal processing, Chroma signal processing, and the sync signal. The ICX2600 was developed for various types of direction compensation for point scan/multi scan TVs. The IC1400 includes functions such as stereo modulation, SAP (Separate Audio Program), dBx noise reduction, and sound processing. The IC2900 is an A/V switch which determines which auxiliary video and audio signals will be processed by the video processor, also it can switch the IF video signal. IC6000 is the main microprocessor and IC6001 is the main memory.

All CS models are module level repair only. The table below contains basic information on the Presentation Series. For more datails please see the Interconnect Diagram in this Manual (section 5).

CS Chassis Model Information								
MODEL	**SCR**	**CABINET**	**JACKS**	**EXTRA FEATURES**	**RESOLUTION**	**REMOTE**	**MICRO**	**OP GUIDE**
ALL MODELS ARE MODULE LEVEL REPAIR								
H27E46DT	27	Table Top	11	VGA card and MPI card	800x600	124-00233-04	P221-1391-P07	206-03755
H27E46DT8	27	Table Top	11	VGA card and MPI card	800x600	124-00233-04	P221-1391-P07	206-03755
H32E46DT	32	Table Top	11	VGA card and MPI card	800x600	124-00233-04	P221-1391-P07	206-03755
H36E46DT	36	Table Top	11	VGA card and MPI card	800x600	124-00233-04	P221-1391-P07	206-03755



CONNECTIONS

The connection center on the rear of the TV allows for connection of the viewing source. The diagrams on the next page list the use of each jack on the connection center.

OUTPUTS

S-Video Loop out luminance is on pin 34 and chroma is on pin 32 of ICX2900. The analog stereo comes from pins 6 and 7 of IC1400 before running through a pre-amplifier circuit. After the pre-amp stage, the audio passes to the jackpack.

CAMPORT

Some models have video and right/left audio input jacks on the front of the receiver. These jacks can be used to view video tapes from a VCR or Camcorder. When the video cable is plugged into the jack, the shorting jack J1 opens, placing a high at pin 10 of the IC6000 microprocessor. This switches the TV into the auxiliary mode.

As long as the cables are attached, the TV set will be locked in auxiliary mode. Use of a remote control or buttons on the front of the set will not permit switching into tuner mode until the video cable is disconnected.

SUPERPORT - MPI

Zenith Commercial Product receivers are now being adapted to interact with other equipment. Prime examples of this can be found in Lodging and Health Care situations where the set is controlled from the main office.

All this is made possible by the new technology that is being built into these receivers. The SuperPort or Multiple Protocol Interface (MPI) jack and associated circuitry allow remote operation of the set.

MULTIPLE PROTOCOL INTERFACE

Television functions and features are controlled by the communication of commands and status information through the Superport by the MPI interface.

EBC (EDGE BOARD CARD)

Allows easy access for removing/installing accessory modules providing a rail mounted slide-through card.

CONNECTION CENTER

1. COMPUTER VIDEO INPUT (HD15)

Standard DB15 receptacle for SVGA input video signal from either PC or Macintosh format. This provides a "Flicker-Free" view of the computer.

2. ANTENNA/CABLE JACK

This jack is used for 75-ohm antenna-type signal connections to the TV. Attach antenna, cable TV line, or other video equipment to jack. The input cable may come from an outdoor or master antenna, cable TV line, cable decoder box, or the RF output from a VCR.

3. S-VIDEO IN AND OUT

These jacks are for input and output connections to SUPER-VHS video equipment. Use the input jack for viewing S-Video. Use the output jack to loop the S-Video signal to an additional TV or monitor. The right and left audio jacks are used for the stereo input or output paired with the S-Video Signal.

4. VIDEO IN AND AUDIO IN

Use the Video and Audio In jacks for baseband video and audio input signals from a VCR or other signal source. To view the signal input to these jacks, select the AUX channel on the TV.

5. COMPUTER AUDIO IN

These jacks provide left and right audio input that can be paired with the computer data input.

6. AUDIO OUT

These jacks provide preamp audio out to be used with an external amplifier.

7. MPI (MULTIPLE PROTOCOL INTERFACE) JACK

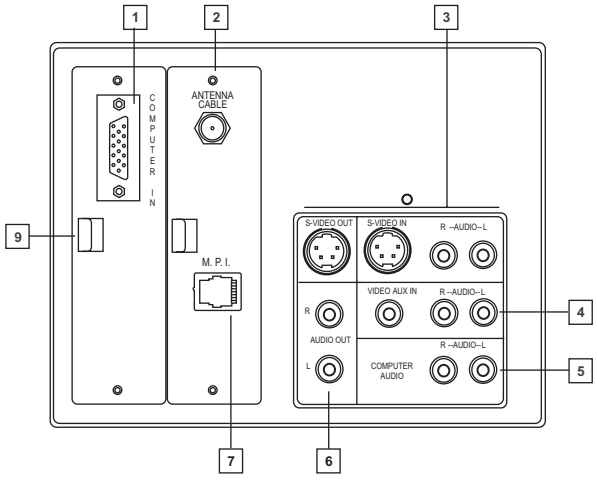
Standard RJ11 jack to provide interface with in-room entertainment and video services. Also used with the installer's remote control for programming other TVs in the system with the same features as the master TV.

8. POWER INDICATOR

The Scan Card power indicator LED (if the set has a Scan Card).

9. SUPERPORT

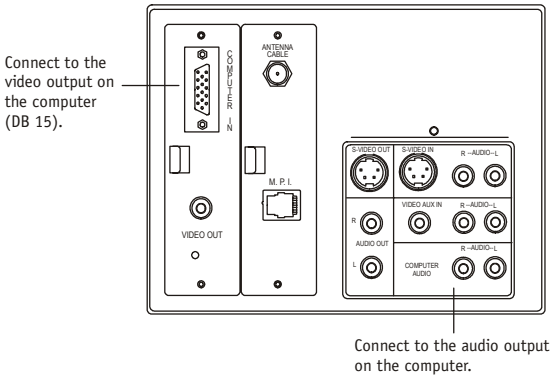
Allows easy installation of an accessory module without removing the cabinet back. Module is housed inside the TV cabinet and receives operating power and all necessary interface signals through internal connections.



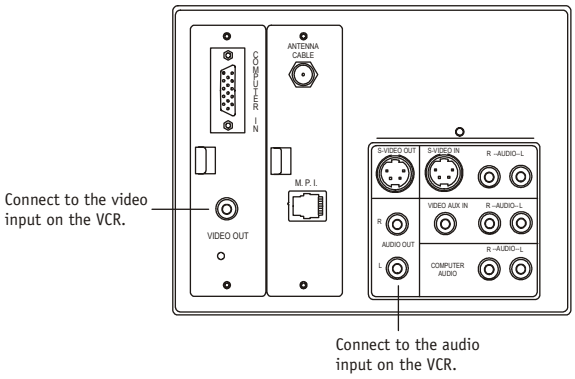
CONNECTIONS

CONNECTING TO A COMPUTER

Installed in the certain units is the PCZTV internal scan converter, provided by FOCUS Enhancements, Inc. This allows the receiver/monitor to be used as a large screen device to view VGA video output of a PC or Macintosh format computer. In order to view these computer images, connect the computer to the Super Port input, turn on the receiver/monitor, set it to the appropriate source and activate your computer.



In addition, the computer images may also be recorded onto video tape if a VCR is connected in as shown in the illustration.



FORMATS

Compatible Video Formats	
Resolution	**Refresh**
640 x 480	60 Hz
640 x 480	72 Hz
800 x 600	60 Hz
800 x 600	67 Hz
1024 x 767	60 Hz
DOS TEXT	70 Hz
640 x 480	67 Hz
832 x 768	67 Hz

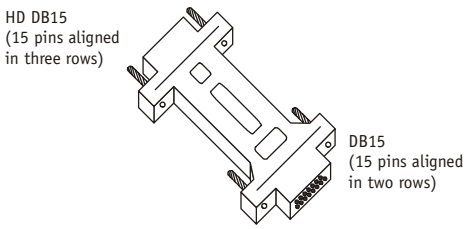
CABLE AND ACCESSORIES KIT

Included with this new receiver/monitor is an accessories kit which provides the necessary items for connecting a computer to the Super Port jack. The kit includes the following:

Accessories Kit	
Quantity	**Accessory Item**
1	15 foot VGA interconnect cable. HD DB15 Male to HD DB15 Male.
1	10 inch Computer Video interconnect cable. Male phone to Male phono (Cable C).
1	HD DB15 Female to DB15 Male adapter.
1	3½ floppy disk: Accessory Video driver software.
(Instructions included separately)	

CONNECTIONS

If the computer provides video out via a DB15 jack (15 pins aligned in two rows), the HD DB 15 to DB15 adapter will have to be used. Plug the DB15 side of the adapter into the DB15 video out of the computer. Then connect the 15-foot video cable, between the HD DB15 side of the adapter and the HD DB15 jack of the Super Port.



HD DB15 Femal to DB15 Male Adapter

DB15 Pin Descriptions			
Pin	Connection	Pin	Connection
1	Red Video Input	9	No Connection
2	Green video Input	10	Digital/Sync (mode)
3	Blue Video Input	11	Reserved (mode)
4	Reserved	12	No Connection
5	Reserved (test)	13	Horizontal Sync
6	Red Video Ground	14	Vertical Sync
7	Green Video Ground	15	No Connection
8	Blue Video Ground		

USING PCZTV

Once the connections to the receiver monitor have been completed, the receiver/monitor can be used to view images from the computer.

1. Turn on the receiver/monitor
2. Tune the receiver/monitor to the appropriate source.
3. Turn on the computer.
4. The computer images should be visible on the screen.

VIDEO ADJUSTMENT

Adjustments to the computer video image are controlled through the remote control. The 2 and 8 buttons shift the display vertically. The 4 and 6 buttons shift the display horizontally. 1 is Zoom, 0 is freeze, and 5 gives menu access.

RECORDING THE COMPUTER IMAGE

If your VCR has an video input jack, the computer images can be recorded to video tape. Connect the VCR as described by the illustration on the previous page.

This jack pack provides L/R audio input paired with computer data input which will allow recording of audio along with the video images. Your computer must provide audio out that can be connected to the jack pack input on the receiver/monitor.

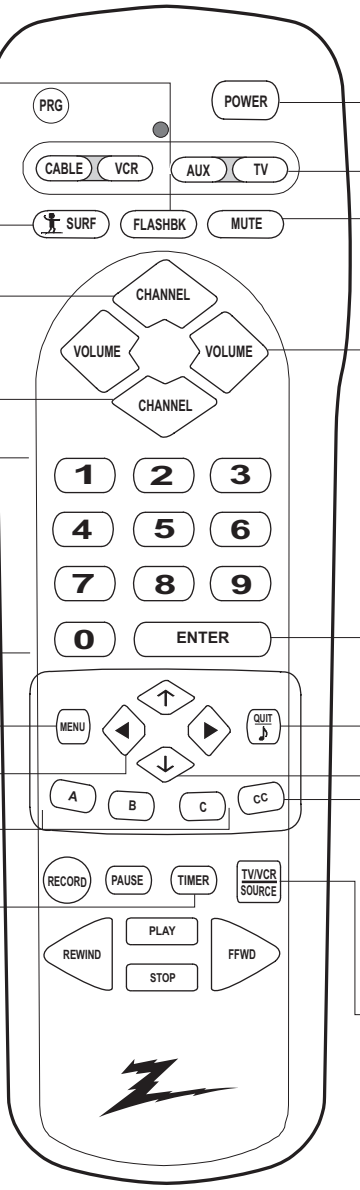
CHOOSING A DESKTOP PATTERN

Because of a television's low resolution (as compared to that of a computer monitor), avoid using computer desktop patterns that consist of elaborate designs or colors. These can tend to vibrate or distort on the screen.

The recommended desktop pattern is either Black, a limited gray design, or some other solid dark color.

VIDEO DISTRIBUTION AMPLIFIER

If your receiver/monitor will be part of a closed circuit network using a cable that is longer then 25 feet, or if several sets will be used together using the loop out jack, then a video distribution amplifier will probably be necessary to ensure adequate signal strength is provided. These types of amplifiers can be purchased separately in many consumer audio/video stores.



FLASHBK (Flashback)
Returns to previous Channel.

SURF
Turns Surf Channel On/Off

CHANNEL (Up/Down)
Selects next channel in TV's memory. Press and hold to repeat.

NUMBER PAD
Selects channels directly.

MENU
Displays menus for TV and other options.

LEFT/RIGHT ARROWS
Chooses and shows the desired menu option.

A, B, C Keys
Special features of some TV's

TIMER
Displays the Sleep Timer menu. Press repeatedly to set desired TV shut-off time.

POWER
Turns TV On or Off.

MODE
Selects the remote's mode of operation

MUTE
Turns sound Off and On while picture remains.

VOLUME (Left/Right)
Increases TV's sound level.

ENTER
Shows Channel/Time, enters channel, or removes any on-screen menus.

QUIT/♪ (Three Functions Key)
Exits from on-screen display, turns the sound enhancement feature on or off, and switches audio between Main source and PIP source.

UP and DOWN ARROWS
Moves highlighted bar within menu to select an option.

CC
Displays closed caption menu.

TV/VCR SOURCE
Steps through source options.

MBR3447C
124-00233-04

PROGRAMMING THE REMOTE

If you're using Zenith products, the remote is already programmed for most common codes: TV = 101, VCR = 201, CABLE = 353, and AUX = 401. For other brands, or if your remote fails to control your Zenith products, you'll have to program the remote.

After installing the batteries, follow these steps for each product:

1. Press and hold PRG using a blunt pointed object. Release PRG after the indicator light turns on.
2. Press the device button to be programmed (CATV, VCR, AUX, or TV).
3. Enter the 3-digit product code from chart on next page.
4. Press and release ENTER to save the code.
5. Point the remote at product and press POWER to test the product's operation. If it does not turn on, reprogram remote using a different code.
6. Write the codes on the label inside the battery compartment for future reference.

AUTO FIND

If none of the codes in the code table operate your equipment, use Auto Find to search for the proper code.

1. Turn on the product you want to operate.
2. Press and hold PRG using a blunt pointed object. Release PRG after the indicator light turns on.
3. Press the key to be programmed (CATV, VCR, AUX, or TV).
4. Enter "000", then press ENTER within two seconds. Auto Find is active after the indicator light flashes and remains lit.
5. Point the remote at the product.
6. Press and release POWER repeatedly, about once a second, until your product turns off. The indicator light turns off when you press POWER and on when you release it.
7. Press ENTER immediately to save the code. The indicator light flashes to indicate the code has been saved.
8. Press POWER to turn On your product.
9. Test your product. If the remote fails to operate some of the basic functions, use Auto Find again to search for a better code. (Auto Find resumes its search after the last code that was entered and saved in step 7).

NOTE: If the indicator light stays on as you press POWER, Auto Find has tried all of the codes. If the product you want to control has not turned off, your remote will not work with that product. To cancel Auto Find, press PRG at any time during Auto Find.

CABLE BOX

This remote can control the cable/converter box volume and muting (instead of the TV's) if available on your equipment.

1. Program the cable/converter box normally.
2. After programming the cable/converter box, Press and hold PRG again using a blunt pointed object. Release PRG after the indicator light turns on.
3. Press and release the device button the cable box is assigned to.
4. This time, enter the special code 3-9-9 instead of the product code.
5. Press and release ENTER to save.

VOLUME OVERRIDE

These remotes can override TV, VCR, or Video Disk Player volume functions with an amplifier's volume and muting.

1. Program the amplifier normally.
2. After programming the amplifier, Press and hold PRG again using a blunt pointed object. Release PRG after the indicator light turns on.
3. Press and release the device button whose volume control is to be replaced by the amplifier volume control. For example, pressing TV will operate the amplifier's volume while the remote is in TV mode.
4. This time, enter the special code 4-9-9 instead of the product code.
5. Press and release ENTER to save.

AUXILIARY CAPABILITY

This remote can control up to seven devices. If the remote has been programmed for four components using the TV, VCR, CABLE, and AUX keys, you may also program it for up to three additional using AUX+1, AUX+2, and AUX+3.

TO PROGRAM AUX+1, AUX+2, AND AUX+3

1. Locate three-digit code for product in code table.
2. Press and hold PRG until indicator lights up.
3. Press the AUX and 1 simultaneously to select AUX+1.
4. Enter the three-digit code and press ENTER. The indicator light should flash and then turn off to indicate the code has been accepted. If the light stays on, repeat steps 3 and 4 or try a different code.
5. Repeat steps 2-4 for AUX+2 and AUX+3.
6. Write the codes on the label inside battery compartment for future reference. Hold down AUX and press 1, 2, or 3 to access AUX+1, +2, or +3 mode.

REMOTE INFO

TV's	
Daewoo	149
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Akai	292,717,718, 719,720
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Broksonic	221,250,255, 729
Candle	727
Canon	704
Capeheart	728
Citizen	727
Craig	212
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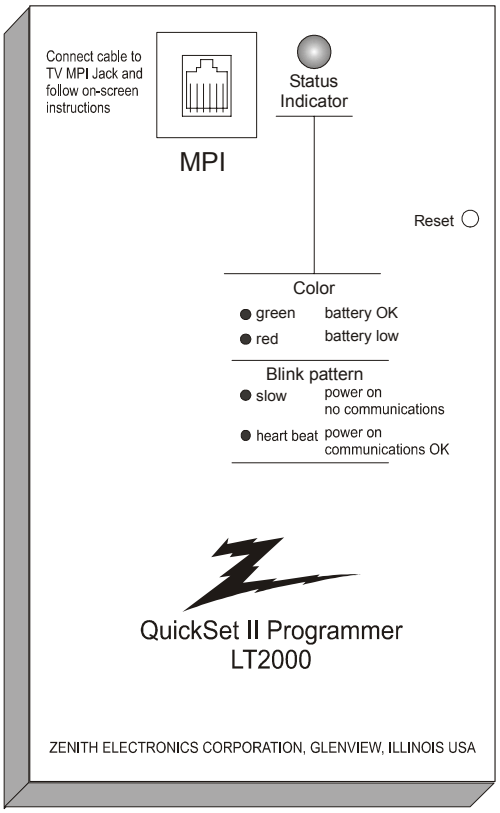


QUICKSET II PROGRAMMER

The Quick Set II programmer LT2000 (or LT1500) allow custom setup and programming information to be quickly copied from a master TV into multiple television sets. The LT2000 can clone programmable labels, but the LT1500 cannot. Once learned from the master, setup data is retained in the LT2000 for future use and recall.

When using the LT2000, operation will be easier if the TV is connected to a good quality signal and displaying a stable picture. To operate the LT2000, use the indicated keys on an installer's remote or user's remote, or the front panel keys on the TV receiver.

SETUP

Begin the programming process by setting up a master TV set using one of the installer's remotes or an MBR remote. Follow the instructions in the operating guide for the specific TV model. Remember to set all features that will be customized including the channel scan list, channel labels, and installer menu setups.

Next connect the LT2000 to the master TV set using the cable provided with the programmer. Connect the cable between the MPI jack on the TV and the programmer. The TV set automatically activates the programmer.

Once connected, check the "Status Indicator" LED on the programmer. If the indicator is green and flashing (a double-blink "heartbeat" pattern), proceed to the next step.

NOTE: A slowly flashing green light indicates there is a problem with the communications between TV and programmer. In this case, check for damaged cable, poor contacts, or other connection problems. If the status indicator is red, the programmer batteries are low.

If communications are good, the sign-on screen will be displayed on the TV screen as shown on the quick setup instructions. If the intention is to set the TV's or programmer's real-time clocks, and not the clone clock or TV clock time settings, then press a key to proceed to the main clone menu.

If a previously stored TV setup is in a particular clone memory, it may be changed if desired by overwriting it with a new setup. There is no need for a separated memory clear operation. Setups stored in programmer memory are nonvolatile and will be retained even after a battery change.

LEARN FROM TV

Select "Learn From TV" then press ON/OFF, POWER, or ENTER to begin learning process. Alternatively, use the TV front panel CHANNEL UP or CHANNEL DOWN keys to highlight choice. Press ON/OFF, POWER, or ENTER to activate. The next screen will allow a choice of four available memories to store this TV setup. Four different TV setups can be stored in the LT2000.

Using the On-screen menu, choose a memory or choose to return to the main selection menu. Now press ON/OFF, POWER, or ENTER to activate your selection. The next screen allows one last opportunity to check the versions of TV and clone setups.

Press ON/OFF or POWER to activate the learning cycle, or press any other keys to return to the selection menu to make another choices.

Once a process has begun, the TV screen will display "LEARNING IN PROGRESS". Please wait for the process to complete. When the TV screen displays "LEARNING COMPLETED", press any key to end the learning process and return to the clone selection menu.

TEACH TO TV

Select "TEACH TO TV", and then press ON/OFF, POWER, or ENTER to begin teaching process. Alternatively, use the TV front panel CHANNEL UP or DOWN keys to highlight the choice and then press ON/OFF, POWER, or ENTER to activate. The next screen displays a choice of the four available memories that can be copied to the TV. Select the desired memory number, and press ON/OFF, POWER, or ENTER to begin the teaching process. Alternatively, use the TV front panel CHANNEL UP or DOWN keys to highlight choice. Press ON/OFF, POWER, or ENTER to begin.

Using the on-screen menu, select a memory or return to the main selection menu. Then press ON/OFF, POWER, or ENTER to activate the selection.

The next screen allows for one last opportunity to check the versions of TV and clone setups. Press ON/OFF or POWER to activate the teaching cycle, or any other key to return to the selection menu to make other choices.

Once a process has begun, the TV screen will display the "TEACHING IN PROGRESS" message. Please wait for the process to complete. When the TV screen displays "TEACHING COMPLETED", press any key to end the teaching process and return to the clone selection menu.

SET CLONE CLOCK FROM TV

To set the real-time clock in the LT2000, select "SET CLONE FROM TV" and then press ON/OFF, POWER, or ENTER to copy current TV time to the clone clock. Alternatively, use the TV front panel CHANNEL UP or CHANNEL DOWN keys to highlight the choice. Then press ON/OFF, POWER, or ENTER to activate.

This process will return the LT2000 to the sign-on screen to display the clone and TV clock settings. Press a key to go to the clone selection menu and perform other functions, or simply disconnect if the time setting was the last task.

SET TV CLOCK FROM CLONE

To set the real time clock in the, select "SET TV CLOCK FROM CLONE" and then press ON/OFF, POWER, or ENTER to copy current LT2000 time to the TV clock. Alternatively, use the TV front panel CHANNEL UP or CHANNEL DOWN keys to highlight the choice. Then press ON/OFF, POWER, or ENTER to activate.

This process will return the LT2000 to the sign-on screen to display the clone and TV clock settings. Press a key to go to the clone selection menu and perform other functions, or simply disconnect if the time setting was the last task.

DISPLAY TV SETUP

Select "DISPLAY TV SETUP", and then press ON/OFF, POWER, or ENTER to begin the teaching process. Alternatively, use the TV front panel CHANNEL UP or CHANNEL DOWN keys to highlight your choice. Then press ON/OFF, POWER, or ENTER.

The TV screen will display the items in the service menu setups. Use this function to quickly check the TV for correct setup. Press any key to clear display and return to the clone selection menu.

DISPLAY CLONE SETUP

Select "DISPLAY CLONE SETUP" and then press ON/OFF, POWER, or ENTER to begin the teaching process. Alternatively, use the TV front panel CHANNEL UP or CHANNEL DOWN keys to highlight the choice, then press ON/OFF, POWER, or ENTER to begin.

The TV screen will display the memory selection menu. Select the desired memory number, and then press ON/OFF, POWER, or ENTER to display the contents of the selected memory. Alternatively, use the TV's CHANNEL UP or CHANNEL DOWN keys to highlight the choice, then press ON/OFF, POWER, or ENTER to begin.

The TV screen will display items in the factory menu setup. Use this function to quickly check contents of a particular clone memory for correct setup. Press any key to clear the display and return to the clone selection menu.

Note: The following two items only appear on sets that do not have the built-in ability to clone channel labels.

EDIT CHANNEL LABELS

Select the edit channel labels option and push ON/OFF, Power, or Enter. Select the memory location (1,2,3,4) and edit.

VOL L/R	Selects update label
CH U/D	Selects label to be changed
MUTE	Clears present setting
ENTER	Loads new labels
POWER	Exits the menu

SEND CHANNEL LABELS

Select the send channel labels option and push ON/OFF, Power, or Enter. Select the memory location (1,2,3,4) and push ON/OFF. A message will indicate that is doing the copy and when it is finished.

OPERATION NOTES

Disconnect the LT2000 from the TV set when the desired task has been completed. Disconnecting the clone automatically switches it off. The real time clock continues to run when the main circuits are switched off.

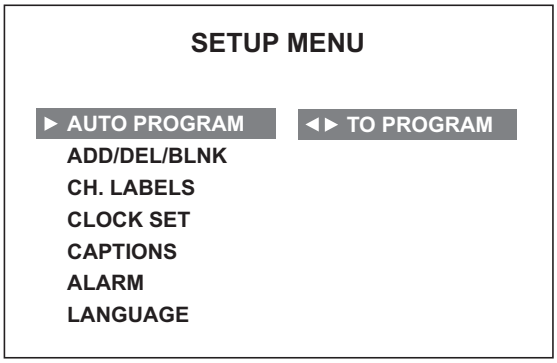
After replacing exhausted batteries, or if the programmer behaves strangely after a static shock, use a paper clip or similar instrument inserted through the small hole marked "RESET" to activate the internal reset switch and restore normal operation. After reset, check the real-time clock setting. It may be necessary to reset the clock from a TV programmed to the correct time.

The specific microprocessor used in any TV set may be determined by activating the service menu. The microprocessor part number appears at the top of the screen with the service menu is activated. Processors before the 221-01006 have limited screen display capability. They cannot display entire screens as shown in the quick setup instructions accompanying the LT2000 programmer. Use the printed menu illustrations on the quick setup sheet as an aid in making programming choices.

SETUP MENU

The Setup Menu and all of the options for Presentation Chassis are described below.

Note: This menu is not available while the set is in computer mode.



AUTO PROGRAM

The Auto Program feature automatically searches for all available channels and marks them as 'added' so that they may be accessed via the channel Up/Down key.

In the Auto Program screen:

- A message at the top displays "Auto Program" to let the customer know that they have entered the Auto Program feature.
- A line at the bottom of the screen shows that the Up/Down and Left/Right Arrow keys are used for Auto Program selections.
- The current RF input type (Off Air Antenna or Cable TV) is highlighted. Use the Up/Down Arrow keys to change the RF input type.

To start the Auto Program, press the Left/Right Arrow key. If the Cable TV input type is selected, the Auto Program routine will determine what type of cable system is present.

Notes:

- *Auto program clears all blanked channels, which were added.*
- *While searching for channels, all keys except for the Power key are disabled. This prevents an incomplete Auto Program procedure.*
- *Running the Auto Program will clear the factory mode, if it was active. This happens at the end of the Auto Program.*
- *If the Auto Program line in the Setup Menu is 'red', this indicates that the module did not pass one of the test equipment's tests.*

If no channels are found then the following message will appear: "Make sure that the cable/ant. is connected and try again."

CHANNEL ADD/DEL/BLNK

After running the Auto Program, all channels found by the Auto Program feature will be marked as 'Added'. However, some of these channels may be scrambled, or undesired by the customer. The Channel Add/Del/Blnk feature allows the customer to selectively mark any channel as 'Deleted' or 'Added'.

To change the status of a channel, press the Right/Left Arrow key.

To change the channel while adding or deleting channels, use the Channel Up/Down keys, or press the desired channel digits followed by 'Enter'. If Channel Up/Down is pressed the next or previous channel, which was marked 'Added', will appear. If only one channel is present, to change the channel the customer must use the digit keypad to select a channel.

CH. LABEL

This feature allows the customer to select a channel label for the current station. This channel label is displayed in the Channel/Time display. Initially, all channel labels are set to '——' (which means that auto label is selected).

To change the current channel label, press the Left or Right Arrow key.

To change the channel while adjusting channel labels, use the Channel Up/Down Arrow keys, or press the desired channel digits, followed by 'Enter'. (If Channel Up/Down is pressed, the next or previous channel that was marked 'Added' will appear.)

Channel Labels						
A&E	CMTV	ESPN	HSE	NOS	TBN	VC
ABC	CNBC	ESP2	HSN	PBS	TELE	VCR
ACTS	CNN	ET	IC	PLAY	TLC	VH-1
ADC	COM	EWTN	INSP	PTL	TMC	VISN
AMC	CSPN	FAM	JCN	QVC	TNN	VJN
BCC	CSP2	FNN	LIFE	RDS	TNT	WB
BET	CTN	FOX	MAX	REQ	TRAV	WGN
BRAV	CTV	F&V	ME/U	SC	TSN	WTBS
CA	DIS	FX	MMT	SCFI	TVA	WWOR
CBC	DISC	GALA	MTV	SHOW	TWC	YTV
CBN	E!	HBO	NBC	SIN	UPN	- - - -
CBS	ENC	HN	NICK	TBS	USA	None

NOTE: Selecting the "- - - -" label option means that auto label is selected. Selecting the "None" option means the channel will not have a label.

Notes:

- *When the "- - - -" label is selected, then the Auto channel label is activated, in other words, the program automatically takes the channel label of the signal that is sent by broadcasting through the XDS service.*
- *If the label None is selected, the Auto channel label is not activated.*

PROGRAMMABLE CHANNEL LABELS

Besides the labels already provided, the customer may select a label of his or her choice. The programmable labels are at the end of the list of labels already provided.

Pressing the volume key allows the editing of the first character. In this case it is the "L" that would start blinking. However, if the Left volume key is pressed, the "1" is the character that would begin to blink. When the character begins to blink, the customer may select another character.

The method of selecting another character is by pressing the channel Up/Down key. If the channel up key were pressed, the character displayed would be an "M". On the other hand, if the channel down key is pressed, the character displayed is an "L".

There are 20 programmable labels that the customer may program. The available characters to choose from are the following:

Programmable Channel Labels								
Blank	ê	Reserved	-	<	K	Z	i	x
|	î	Reserved	.	=	L	[	j	y
|	ô	Space	/	>	M	\	k	z
Blank	û	!	0	?	N	]	l	{
Ò	á	"	1	@	O	^	m	|
°	é	#	2	A	P	_	n	}
½	í	$	3	B	Q	‘	o	~
¿	ó	%	4	C	R	a	p	Block
ä	ú	&	5	D	S	b	q	
¢	V	’	6	E	T	c	r	
£	¸	(	7	F	U	d	s	
		)	8	G	V	e	t	
à	ñ	*	9	H	W	f	u	
è	Reserved	+	:	I	X	g	v	
â	Reserved	‘	;	J	Y	h	w	

Notes:

- *If the mute key is pressed, the label is cleared. The channel is automatically given the label NONE.*
- *Any changes done to a label are stored even if another keystroke occurs. For example if the customer is programming a label and the first 3 letters are entered and accidentally the ENTER key is pressed or the Menu key is pressed, the label is stored with only the three characters being changed. The other two remain unchanged. The programmable labels have 5 characters that may be programmed.*
- *If, for example, the 10th label is programmed as ABCDE, then the customer decides to clear it. The channel automatically receives the label NONE and label 10 is restored to LAB10.*
- *Using the Channel Up/Down the customer may select the above-mentioned characters.*

CLOCK SET

This Setup Menu Line allows the customer to set the clock time and date.

When no time is set, the display shows: - -: - -

There are two ways to set the time:

1. Direct Entry is preferred. Use the digit keys, followed by 'Enter' or Select Up/Down.
2. Left/Right Arrow keys.

When the first digit is introduced, the display shows:

0:0d AM

When the time is set, the display shows:

hh:mm AM

where d = digit, mm = minutes, and hh = hours.

To select either AM or PM, the Timer key must be used. Pressing the Timer key, toggles AM and PM to allow the customer to select AM or PM.

Notes:

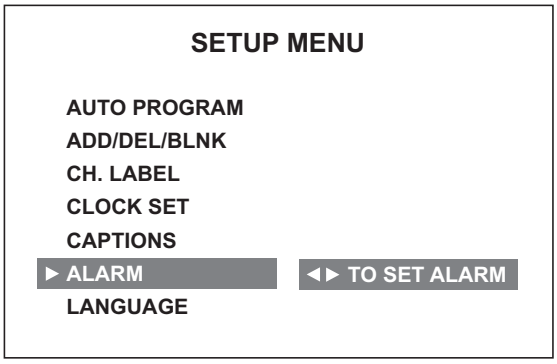
- *Entering the time in 24 hour (Military) format is allowed. AM/PM will be toggled automatically.*
- *Entering an invalid time ("0" for example) will result in the clearing of the current time - - : - -.*
- *When only one digit is pressed and no other is pressed in an interval of seven seconds, the current time will be cleared.*

CAPTION

This function allows the user to show in the screen the configuration menu to captions.

ALARM

If the factory menu item Alarm is set to 1 the Alarm feature is activated.

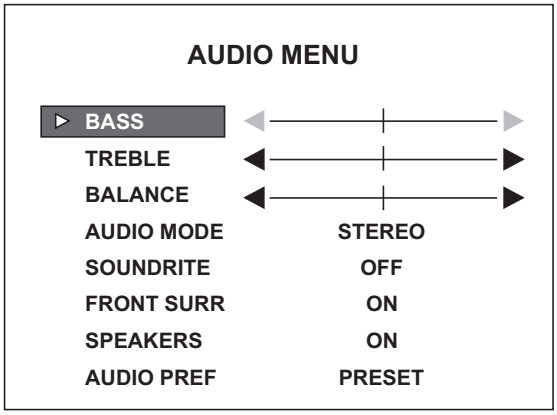


LANGUAGE

This feature allows the customer to change the menu language from English, Spanish, or French by pressing the Left/Right Arrow keys.

AUDIO MENU

All options in the Audio Menu are selected with the Up Arrow key. Once the option is selected, use the Left/Right Arrow keys to adjust to option to the desired setting.



BASS

Bass adjustment has 15 steps (0 to 14). A center mark indicates step 7.

TREBLE

Treble adjustment has 15 steps (0 to 14). A center mark indicates step 7.

BALANCE

Balance adjustment has 29 steps (0 to 28). A center mark indicates step 14.

AUDIO MODE

There are three audio modes available: Mono, Stereo, 2nd Audio/SAP.

If 2nd Audio/SAP is selected, but the current channel does not support SAP, then either Stereo or Mono will be heard.

SOUNDRITE

The SoundRite feature is used to obtain a uniform volume level, particularly while changing channels. The SoundRite feature can be best demonstrated on a channel with no signal (snow).

FRONT SURROUND

Front Surround sound can be set to 'ON' or 'OFF', regardless of the current Audio Mode setting. However, the surround effect can only be heard when the Audio Mode has been set to 'Stereo' and a Stereo signal is present. When this condition exists, there will be a short mute (200ms) while toggling the Surround 'On' to 'Off', to embellish front surround activation.

SPEAKERS

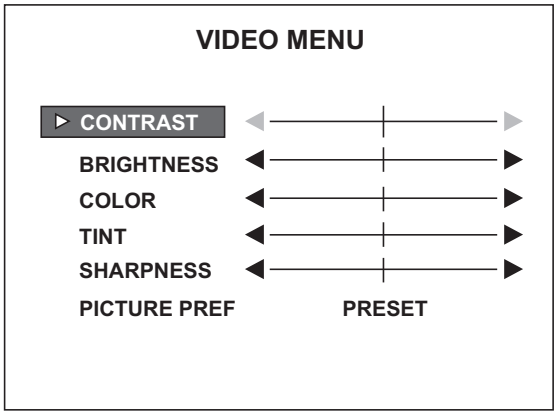
The Speaker feature is used to turn the internal speakers on or off. It does this by pulling the power amp mute line.

AUDIO PREF

This feature allows the customer to maintain two separate audio settings by selecting "custom" or "preset". The Factory gets the "Preset" setting and the customer sets "custom". The PRESET and CUSTOM settings are selected using the Left/Right arrow keys.

VIDEO MENU

All menu items are adjusted with the Left/Right Arrow keys. Each option of the Video Menu is shown below:



CONTRAST

Contrast adjustment has 64 steps (0 to 63).

BRIGHTNESS

Adjusts the brightness of the picture.

COLOR

Color adjustment also has 64 steps (0 to 63).

TINT

Tint Adjustment has 64 steps (0 to 63). A center mark indicates step 29.

SHARPNESS

Sharpness adjustment has 64 steps (0 to 63). The sharpness value is sent to the video processor as Custom Sharpness.

PICTURE PREF

This feature allows the customer to maintain two separate Contrast, Brightness, Color, Tint, Sharpness setting "Custom" and "Preset". The factory sets the "Preset" setting and the customer sets "Custom". The PRESET and CUSTOM settings are selected using the Left/Right Arrow keys.

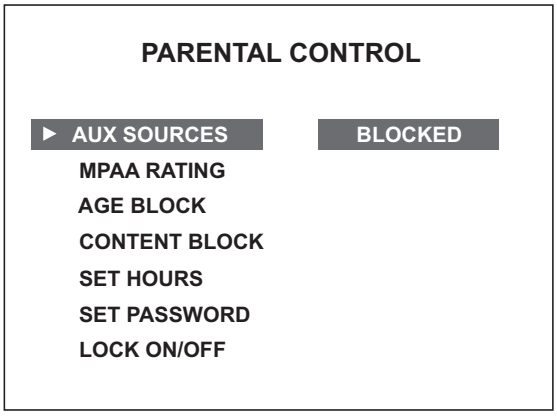
PARENTAL CONTROL

The Parental Control Menu items are selected with the Up/Down Arrow keys. Once the option is selected, use the Left/Right Arrows keys to set each of the option.

Note: The Parental Control Menu is not available while in computer mode.

AUXILIARY SOURCES

To block or unblock the sources, press the Left/Right Arrow key.



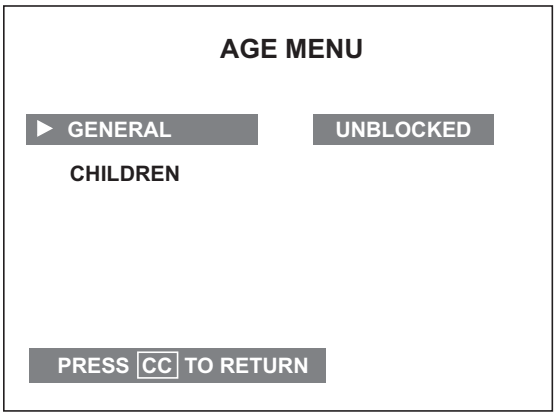
Note: The SOURCE key may be used to view the video source.

MPAA RATING

The MPAA selector allows the customer to select either to have the channel Unblocked, G AND ABOVE, PG AND ABOVE, PG-13 AND ABOVE, R AND ABOVE, NC-17 AND ABOVE, or X.

AGE MENU

Use the Left/Right Arrow keys to select the Age Block Menu.



GENERAL BLOCK

Once entering into the Age Block Menu, the customer has the option to block channels for general age or to block channels for children.

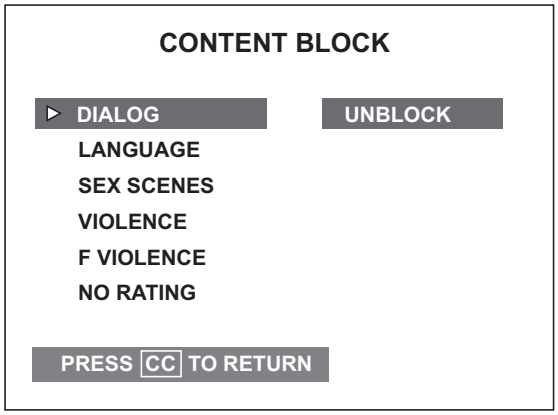
To block channels for a general age, the customer may either select: UNBLOCKED, TV-G AND ABOVE, TV-PG AND ABOVE, TV-14 AND ABOVE or TV-MA.

CHILDREN BLOCK

To block channels for children, select either: Unblocked, TV-Y AND ABOVE or TV-Y7.

CONTENT BLOCK

Use the Left/Right Arrow keys to select the Content Block Menu.



DIALOG BLOCK

To block the dialog, use the Left/Right Arrow keys to select either: Unblocked, TV-PG AND ABOVE or TV-14.

LANGUAGE BLOCK

To block the dialog, use the Left/Right arrow keys to select either: Unblocked, TV-PG AND ABOVE, TV-14 AND ABOVE, or TV-MA.

SEX SCENES BLOCK

To block the Sex Scenes, use the Left/Right Arrow keys to select either: Unblocked, TV-PG AND ABOVE, TV-14 AND ABOVE, or TV-MA.

VIOLENCE BLOCK

To block the Violence, use the Left/Right arrow keys to select either: Unblocked, TV-PG AND ABOVE, TV-14 AND ABOVE, or TV-MA.

F VIOLENCE BLOCK

To block the F Violence, use the Left/Right Arrow keys to select either: Unblocked, TV-Y7.

NO RATING

To block No Rating, use the Left/Right Arrow keys to select either: Unblocked and Blocked.

SET HOURS

Use the Left/Right Arrow keys to adjust the number of hours the Parental Control feature will be active.

SET PASSWORD

Press the Left/Right Arrow key to allow setting a Password.

TO ENTER PASSWORD

The software accepts four-digit codes only. The customer must enter a password.

REPEAT PASSWORD

After a four-digit code has been entered, the software requires the customer to re-enter the same four-digit code.

PASSWORD NOT ACCEPTED

If an invalid code is entered, or the two codes entered do not match, an error message ("Not Accepted!") will appear blinking.

Note: This error message also appears when no code is entered for the password or if only one digit is entered and no other digit has been entered.

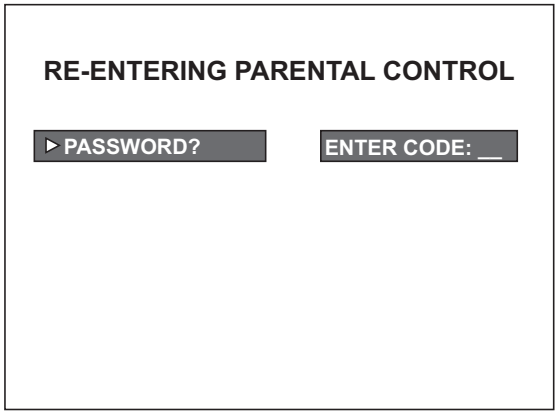
LOCK ON/OFF

This item turns the Parental Control feature on or off. The Ctrl. feature can only be turned on if the hours > 0, and a password has been set. Otherwise the Lock On/Off line will display either of the following error messages: "Must Set Hours" or "Must Set Password."

RE-ENTERING PARENTAL CONTROL MENU

If the Parental Control feature has been activated, the software will not allow immediate entry into the Parental Control Menu. Instead, it will prompt for the correct password.

If the correct password is entered, the Parental Control menu will appear, with the highlighted item "Lock On/Off", which assumes that the customer most likely wants to turn the feature off. If an incorrect password is entered, an error message ("Not Accepted!") appears, and will not disappear until 5 seconds has elapsed. This extended time provision increases the amount of time necessary for a child to "crack" the password.

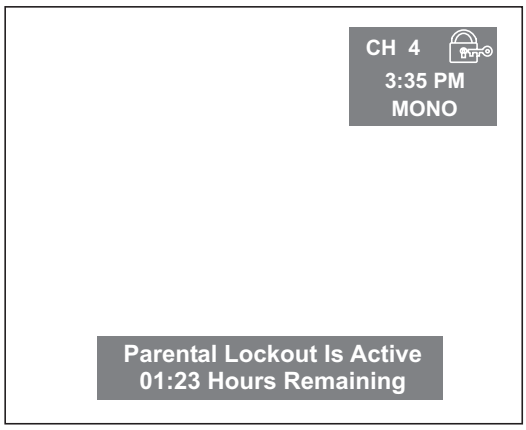


Notes:

- *The Parental Control menu will remain up for 15 seconds after the last key press.*
- *The QUIT key may be pressed to remove the Parental Control menu if the actual channel source is blocked.*

DISPLAY WHEN PARENTAL CONTROL IS ACTIVE

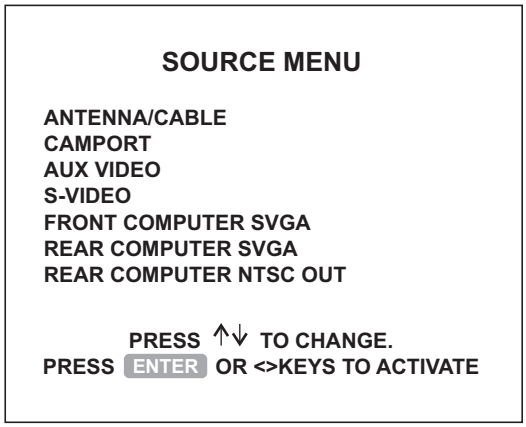
When the Parental Control is active and the channel is blocked, the display on the screen shows two lines. The first line displays a message saying that the "PARENTAL LOCKOUT IS ACTIVE." The second line displays the amount of time (in hours) left in the lockout.



SOURCE MENU

This option allows the user to select the source they desire, which determines the signal that feeds the video processor, the options are: ANTENNA/CABLE, AUX VIDEO or VIDEO, CAMPORT, FRONT COMPUTER SVGA, REAR COMPUTER SVGA, and REAR COMPUTER NTSC OUT.

Use the arrow keys and the ENTER key for signal switching.

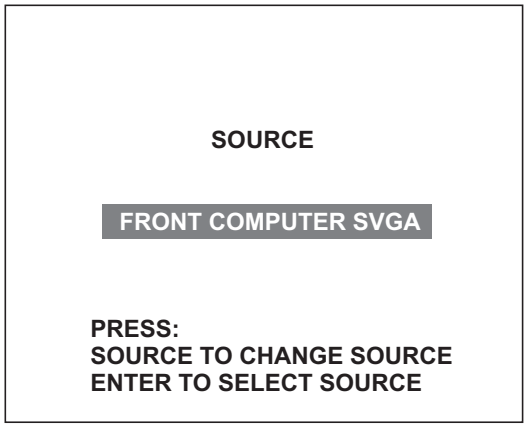


SOURCE MENU

ALTERNATE SOURCE MENU BY TV/SOURCE KEY

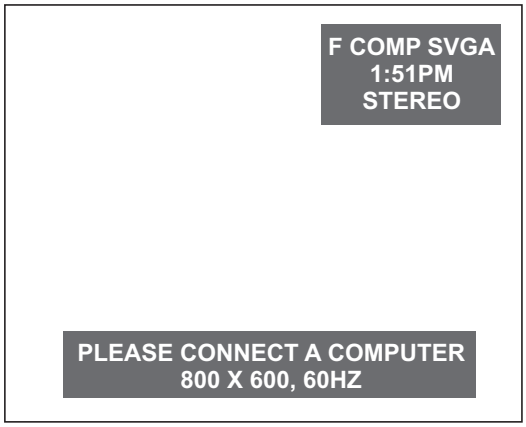
Same as source menu, but using the TV/SOURCE Key.

Note: CAMPORT (#33) and FRONT COMPUTER SVGA (#209) are only available when the Auto-Sense feature for either has been disabled in the Factory Menu.



To select a Source, press the Source Key and source menu appears (as shown below) showing the present source. Pressing the Source key again, switches to the next source but the input signal does not change. Once the desired source is found, pressing the ENTER key selects that source and changes the input. If ENTER is not pressed in approximately 15 sec. The source menu turns off.

Note: If any one of the three computer sources is selected and no computer is connected to the source, the following screen will appear:



MUTE

When the Mute key is pressed, the speakers will be turned off.

MUTE WITH CHANNEL DISPLAY

When the mute key is pressed and the channel display is on, the following display appears:

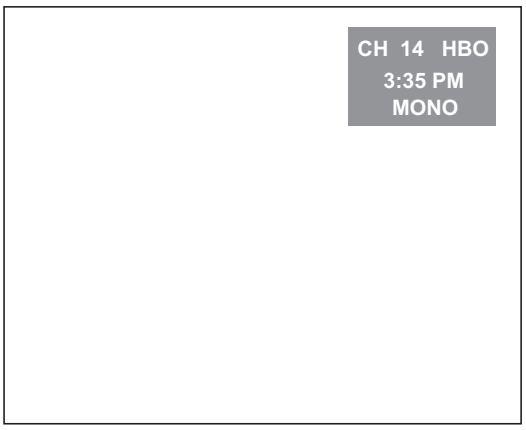
MUTE WITHOUT CHANNEL DISPLAY

When the mute key is pressed and channel display is off, the following display appears:

CHANNEL TIME DISPLAY

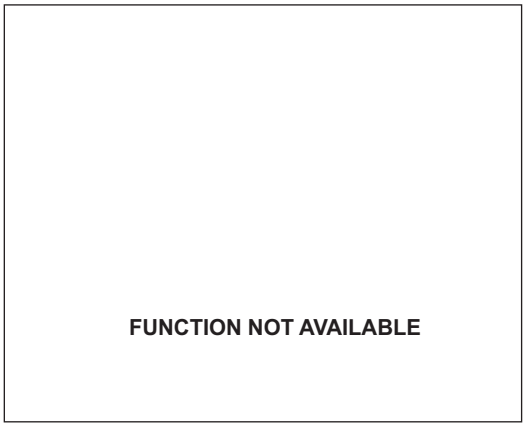
When the ENTER key is pressed the TV display will appear. The following is an example of the display screen:

The first line is the channel and the label (if one has been selected for the channel). The second line, displays the time. The third line displays the Audio mode (Mono, Stereo or SAP).



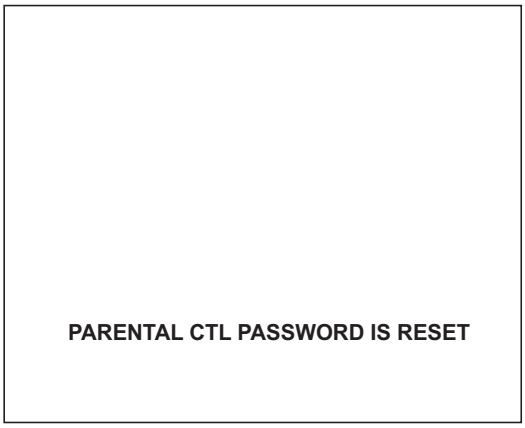
FUNCTION NOT AVAILABLE DISPLAY

When the Time has not been set yet, and the customer wants to enter the Alarm Menu, there will be an error notification stating that the function is not available.



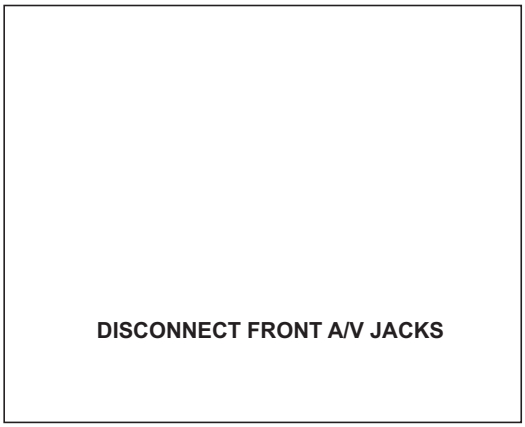
PARENTAL CONTROL PASSWORD IS RESET DISPLAY

To reset parental control, press & hold the MENU key until the Channel/Time display appears, then press '9', '8', '7', '6', and CC. The following menu appears after the parental control is reset:



DISCONNECT FRONT A/V JACKS DISPLAY

If the channel Up/Down keys are pressed and Auto Camport in the Factory Menu (#33) has been enabled and there is a device connected to the front Camport, the following message appears:



VIDEO SOURCE INPUT

CUSTOM FEATURES

(For Video Source Input)

Same as Setup Menu for an RF signal.

AUDIO MENU

(For Video Source Input)

Same as Audio Menu for an RF signal, except auto mode is not available.

VIDEO MENU

(For Video Source Input)

All menu items are adjusted with the Left/Right Arrow keys. Same as the Video Menu for a RF signal.

This feature allows the customer to maintain two separate Contrast, Brightness, Color, Tint, and Sharpness settings "Custom" and "Preset". The factory sets the "Preset" setting and the customer sets "Custom". The PRESET and CUSTOM settings are selected using the Left/ Right Arrow keys.

PARENTAL CONTROL

(For Video Source Input)

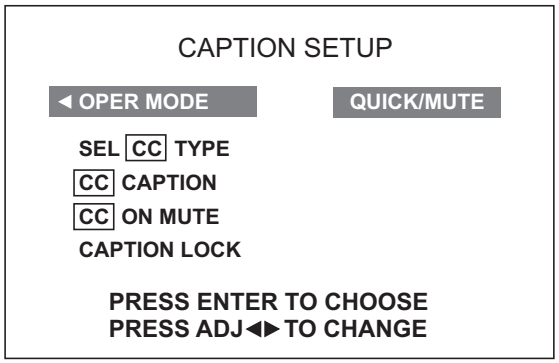
The Parental Control Menu items are selected with the Up/Down Arrow keys. Once the option is selected, use the Left/Right Arrows keys to set each of the option.

Notes:

- *This Parental Control is the same as the Parental Control for the Ant/Cable source input.*
- *Also, There is no Parental Control Menu when the input source is any of the Computer sources.*

CAPTIONS SETUP

The caption setup items are selected with the UP/DOWN arrow keys. Once the option is selected, use the Left/ Right arrows keys to set each option.



Note: When the user selects the quick/mute operation, if the cc key is pressed, the next message is displayed.

OPERATION MODE

Toggle "between" quick/mute operation or standard operation.

SELECT CC TYPE

In this option the user can select the type of captions used. The caption types available are: caption1, caption 2, caption3, caption4, Text1, Text2, Text3, and Text4.

CC CAPTION

This option switches the caption selected in "select cc type" ON or OFF.

CC ON MUTE

This option enables the captions when the TV is muted.

CAPTION LOCK

This option stores the caption configuration in EEPROM. It also is used to remember the last configuration of the captions.

COMPUTER SOURCE INPUT

AUDIO MENU

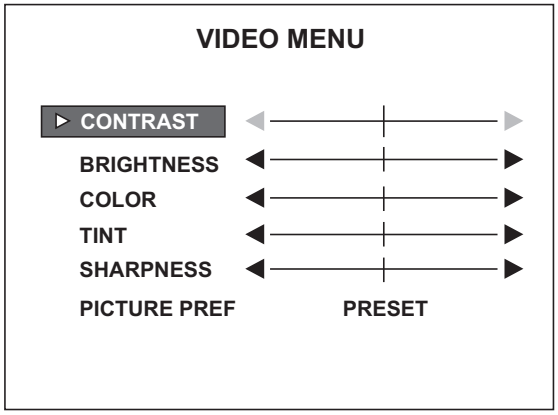
(For Computer Source Input)

Same as Audio Menu for a RF signal, except audio mode is not available.

VIDEO MENU

(For Computer Source Input)

All menu items are adjusted with the Left/Right Arrow keys. Each option of the Video Menu is shown below:



CONTRAST

Contrast adjustment of the picture has 64 steps (0 to 63).

BRIGHTNESS

Adjusts the brightness of the picture.

RED ADJUSTMENT

The Red adjustment allows the customer to adjust the Red for Comp. SVGA or NTSC. To accomplish this the Red adjustment can be adjusted 4 steps down or 4 steps up from the value set in the Factory Item 153 RED DRIVE SVGA. If this factory menu item is set at 30, the Red adjustment in the Video Menu allows the Red Offset to be set at –4 or +4 of the default value. Below is the Menu item.

GREEN ADJUSTMENT

The Green adjustment allows the customer to adjust the Green for Comp. SVGA or NTSC. To accomplish this the Green adjustment can be adjusted 4 steps down or 4 steps up from the value set in the Factory Item 153 GREEN DRIVE SVGA.

If this factory menu item is set at 30, the Green adjustment in the Video Menu allows the Green Offset to be set at –4 or +4 of the default value. Below is the Menu item.

BLUE ADJUSTMENT

The Blue adjustment allows the customer to adjust the Blue for Comp. SVGA or NTSC. To accomplish this the Blue adjustment can be adjusted 4 steps down or 4 steps up from the value set in the Factory Item 155 BLUE DRIVE SVGA. If this factory menu item is set at 30, the Blue adjustment in the Video Menu allows the Blue Offset to be set at –4 or +4 of the default value. Below is the Menu item.

HORIZONTAL POSITION

The Horizontal Position adjustment has 64 steps (0 to 63). This Video Menu item allows the adjusting of the Horizontal Position of the screen.

VERTICAL POSITION

This Video Menu item allows the adjusting of the Vertical Position of the screen.

HORIZONTAL SIZE

The horizontal size adjustment allows customer to adjust the Horizontal size for Comp. SVGA or NTSC. Factory reference is 179.

VERTICAL SIZE

The vertical size adjustment allows customer to adjust the Vertical size for Comp. SVGA or NTSC. Factory reference is 190.

PICTURE PREF

The Picture Preference allows the customer to adjust all the items of the Video Menu or to select Preset values.

REMOTE CONTROL FUNCTIONS

The customer has the option to use the remote control to activate certain functions from the OSD.

Notes:

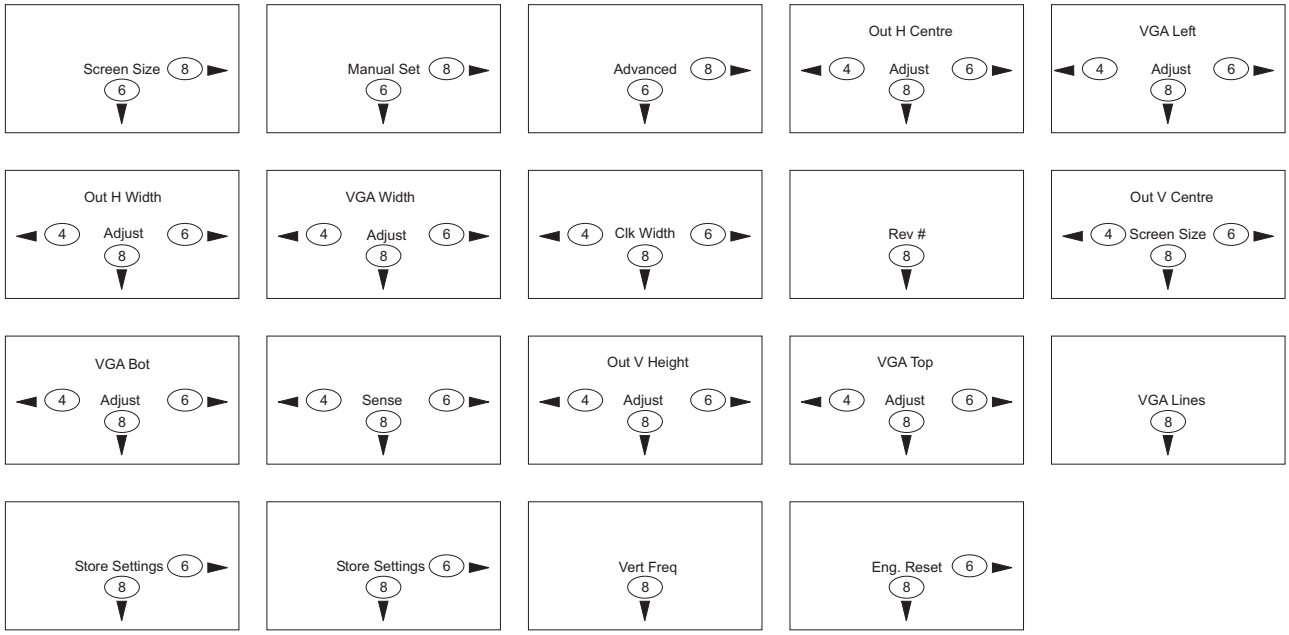
- *Use a full screen computer display with high average brightness for best results.*
- *Auto Size will adjust the computer image to match the TV screen.*
- *The image cannot be zoomed in Freeze Mode.*

As with the Remote Key Command Functions, menus are operated through the Numbered Keypad. Generally speaking, keys 4 and 6 adjust menu options, key 8 cycles through menus and key 5 cancels all operations no matter what menu is being are adjusting.

Remote Functions			
KEY	NORMAL MODE	MENU MODE	ZOOM MODE
1	Enter Zoom Mode	N/A	Cancel Zoom Mode
2	N/A	N/A	Pan Up
3	Compress On/Off	N/A	Compress On/Off
4	N/A	Menu Adjust	Pan Left
5	Enter Menu Mode	Cancel Menu Mode	Enter Menu Mode
6	N/A	Menu Adjust	Pan Right
7	Begin Auto-Size	N/A	Begin Auto-Size
8	N/A	Menu Select	Pan Down
9	N/A	N/A	N/A
0	Freeze	N/A	Freeze

Limits of Settings	
SETTING	RANGE
Out h-Centre	65 to 85
Out H-Width	80 to 120
Out V-Centre	107 to 232 for NTSC, 300 to 400 for SV
Out V-Height	200 to 250 for NTSC, 480 to 600 for SV
VGA Left	0 to 20
VGA Width	30 to 81
VGA Top/4	0 to 40
VGA bottom/4	70 to 260 (i.e. up to 200 *4 = 800line
Sense Level	1 to 3
Clk Width	0 to 3

Remote Key Command Functions


Screen Size 8 6
Manual Set 8 6
Advanced 8 6
Out H Centre 4 Adjust 6 8
VGA Left 4 Adjust 6 8
Out H Width 4 Adjust 6 8
VGA Width 4 Adjust 6 8
4 Clk Width 6 8
Rev # 8
Out V Centre 4 Screen Size 6 8
VGA Bot 4 Adjust 6 8
4 Sense 6 8
Out V Height 4 Adjust 6 8
VGA Top 4 Adjust 6 8
VGA Lines 8
Store Settings 6 8
Store Settings 6 8
Vert Freq 8
Eng. Reset 6 8

SERVICE MENU

Access the Installer's Menu by using the remote control or the keyboard on the front of the set. With the remote: Press & Hold MENU key until the Channel/Time display appears, then press 9, 8, 7, 6, and ENTER.

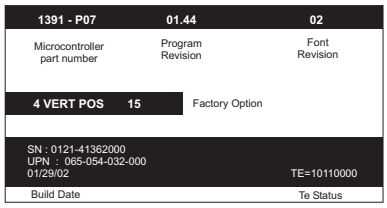
Press and hold MENU key until the Channel/Time display appears. Simultaneously press the ADJUST Right and CHANNEL Up keys. To exit Installer's Menu, press ENTER.

Notes:

- *When the factory mode is set to "1", then press '9', '8', '7', and '6', followed by 'ENTER' to access the Installer's Menu.*
- *To reset parental control press & hold the MENU key until the Channel/Time display appears, then press '9', '8', '7', '6', and CC .*

00 F Mode: Use the Select key to select item #00, which is the first item in the Installer's Menu. The Factory Mode item should always be left off (Zero is off). When left in this mode, only items from 0 to 27 are visible. When the factory mode is set to 1, all menu (Audio or Video settings) items will be available. Also they will appear on the screen one at a time at the top left of the screen.

When The Factory Mode is on, the Factory Menu line appears at the top of the screen to allow for proper setting of the video.



When the Factory Mode is turned off, all TV functions are returned to normal. The dashes on the menus are removed indicating that the Factory Mode is off. There are 4 ways to turn off the Factory Mode:

1. Change Installer's Menu Item "00 F Mode" to 0.
2. Run Auto Program.
3. Use the Clock Set feature to set the time.
4. Use Factory off IR code.

Notes:

- *AC Power on Enabled: The 'AC Power on' feature is always enabled, regardless of the state of the "AC on" Installer's Menu item. The set will automatically turn on when AC power is applied. The POWER key will not turn the set off. The only way to turn off the set is by removing the AC power.*
- *Auto off enabled: The Auto Off feature is always enabled, regardless of the state of the "Auto OFF" Factory Menu item.*
- *Settings Displayed in Customer Menus: When adjusting a bar graph setting in the Video and Audio Menus, a number is displayed showing the actual numeric value stored in EEPROM for that setting. On menu items without a bar graph setting, two dashes indicate that the Factory Mode is on.*
- *Video Preference Settings Inhibited: In the Video Menu, the Custom Video Preference settings are inhibited while the Factory Mode is on and will NOT be stored in EEPROM. (This allows the factory to temporarily change the settings and not store them permanently.)*

01 Preset Px: Used to store the customer menu adjustments in the nonvolatile memory of the EAROM. Settings for Contrast, Brightness, Color and Tint are stored in this manner. 0 is Custom and 1 is Preset.

02 Preset Ax: Saves your custom audio settings (Bass, table, balance, audio mode, Soundrite, front surround, speaker) in nonvolatile memory (not affected by power loss). Memory status is indicated by a 1 for "custom settings already stored", or 0 for "custom settings have not been stored."

03 Power Manage: Used for saving energy. When set to 0, Power Manage is off. The number represents the hours that the TV will remain on, unless there has been activity from either the control panel or remote.

04 Vert Pos: Moves Captions and displays vertically on the screen. Use the ADJUST keys.

05 Horz Pos: Moves Captions and displays horizontally on the screen. Use the ADJUST keys.

06 Band/Afc: There are 8 possible settings for this option.

0 = Broadcast Fixed	4 = Broadcast AFC
5 = CATV Fixed	1 = CATV AFC
6 = HRC Fixed	2 = HRC AFC
7 = ICC Fixed	3 = ICC AFC

07 Min Volume: Determines the minimum volume level allowable with the VOLUME (VOL) Up/Down Control. In this way, for example, someone cannot set the volume too low to hear. The factory default is 0, which provides full range of volume control. It may be best to set the same value on every TV.

Note: The minimum volume level cannot have a value setting higher than in the MAX VOLUME level (described below).

08 Max Volume: Determines the maximum volume level allowable with the VOLUME (VOL) Up/Down Control. In this way, for example, someone cannot set the volume level high enough to disturb others. The factory default is 63, which provides full range of volume control. It may be best to set the same value on every TV.

Note: The maximum volume level cannot have a value setting lower than in the MIN VOLUME level (described above).

09 AC on: Allows the TV to turn ON just by applying AC power. Pressing the ON button is not necessary. This is desirable when the TV is plugged into a cable box or a power outlet controlled by a wall switch. Use adjust to select 0 or 1, where 0 is OFF and 1 is ON.

Note: When set to 1 (ON), the TV does not respond to ON/OFF commands from either the remote or the control panel, and the SLEEP TIMER is also nonfunctional.

10 Key Defeat: When set to 1, it prevents the end user from accessing screen menus on the front panel keys, SELECT and ADJUST do not function. When set to 0, those keys are functional. The menus can always be accessed with MENU on the remote.

11 Strt Ch: When active, this function allows you to set the initial volume level setting and channel number when the TV is turned ON. This feature is useful for an in-house information channel, since the TV would always select that channel when it is turned on. When inactive, the volume level and channel retain the settings when the set was last used.

The range of values is 0-255. Use the ADJUST keys to choose. With number 255 the feature is inactive. Other numbers determine the start channel. Set the volume level as desired before exiting the service menu. 0 is the "AUX" channel.

12 Strt Vol: When active, this fuction allows you to determine the initial volume level setting when the TV is turned on. This feature is useful for an in-house information volume, since the TV would always select that volume when is turned on. When inactive, the volume level retain the settings when the set was last used.

13 Not Used

14 Chan Lock: When set to 1 the CHAN LOCK is ideal if a cable box (or similar) is the sole source for programming and the TV must always be on the same channel. Changing channels with the Channel Up/Down or keypad numbers is impossible. Channel Lock is inactive when set to 0 (default).

Generally, this feature is used in connection with START CHAN/VOL where the start channel may, for example, be set to 3 or 4. If the start channel is 3 then the TV will remain on channel 3.

15 Ghost Ch: When set to 1, the current channel number is displayed in the upper right corner of the CRT. The number moves slightly to prevent damage to the screen. The default is "0" or OFF. When captions are on, the "ghost" channel is not displayed.

16 Not Used

17 Text Mode: Determines whether TEXT 1 and TEXT 2 decoding is enabled when CAPTIONS are turned on (either from the Setup Menu or directly with CC on remote). When set to 1, only Caption 1, 2, 3, and 4 are enabled. When set to 2, Caption 1, 2, 3, and 4 and Text 1, 2, 3, and 4 are enabled.

18 Sleep Timer: When set to 1, a end-user may set the SLEEP TIMER feature (but no message is displayed prior to turnoff). When set to 0, the sleep timer is not available.

19 Alarm: Gives you the option of making the alarm function available to the end-user. Set to 1, alarm function is available. Set to 0 to withhold this function.

20 Ch. Over Ride: When set to 1, the user is allowed to select channels with either Channel Up/Down or by direct keypad entry. When set to 0, only those channels that are entered for scanning may be selected.

21 Old Ocv: Set to 1 for operation with "SpectraMate" systems from on command corporation.

22 Caption Lock: Set to 1 to restore previous caption on/off state after the TV turns off when set to 0, captions are always off when TV is initially turned on.

23 Function Pre: Set to 1 to suppress channel prev screen and enable user function menu with some pay per view systems.

24 Feature Level: Set to 1 to see Zenith Code, when set to 0 Private Codes are shown.

25 NTSC ScanCard: Set to 1 to instate TV ONE card in NTSC mode.

26 Not Used

27 Mute disable: This function disable the mute operation in the TV. Also applies for MPI operation.

28 V-Chip: Enable/Disable the V-CHIP.

29 Max Block Hrs: Enable the V-CHIP maximum block time.

30 Strt Aux Srce: Enable the initial AUX when is accessed with Up/Down key or 999.

FACTORY MENU ITEMS

31 Mute time: Time during the TV stays in blank state when Real Time= Mute Time * lbms the switching is between sources.

32 Y/C Loop out: Enable/Disable the Y/C out of the rear Jack Pack.

33 Auto Camport: Enable/Disable the Camport Auto Detect.

34 Not Used

35 A Att: Adjust the signal level input to COMPIN (Pin 19) to the standard input level. Variable range of the input signal: 245 mVrms –5.0 dB to +3.0 dB. 0 = Level min. and 15 = Level max.

36 A Vco: Adjust STEREO & SAP VCO free running frequency (fo). Variable range: fo ±20%. 0 = Free running frequency min, 63 = Free running frequency max.

37A Filter: Adjust the filter fo of the ST, SAP and dbx blocks. Variable range: fo ±20% 0 = Frequency min, 63 = Frequency max.

38 A Spectral: Perform high frequency (fs= 3 kHz) separation adjustment. 0 = Level max, 63 = Level min.

39 Wide Band: Perform low frequency (fs= 300 Hz) separation adjustment. 0 = Level min, 63 = Level max.

NTSC IC 221-1377 FROM 40 TO 61

40 Hue: Hue Control. Range: 0-63, 0 = Flesh color appears red, 63 = Flesh color appears green.

41 Dpic off: Y black expansion ON/OFF switch. Range: 0-1, 0 = ON, 1 = OFF.

42 Color: Color control. Range: 0-63, 0 = Minimum 63 = Maximum.

43 Canal: When this register is set to "1", the first and last 3H of the video are replaced by DC during YUV output. Range: 0-1, 0 = No video portion DC replacement, 1 = DC replacement.

44 Sharpness: Sharpness control. Range: 0-1, 0 = Minimum, 15 = Maximum.

45 Sub Cont: Sub contrast adjustment. Range: 0-15, 0 = Minimum, 15 = Maximum.

46 Sub Hue: Hue center adjustment. Range: 0-15, 0 = Flesh color appears red, 15 = Flesh color appears green.

47 Sub Color: Color center adjustment. Range: 0-15, 0 = Minimum, 15 = Maximum.

48 C-Trap Adj: Chroma trap adjustment. Range: 0-15, 0 = High, 7 = Center, 15 = Low.

49 Afc: AFC loop gain selector. Range 0-15, 0 = AFC loop gain high, 1 = AFC loop gain medium, 2 = AFC loop gain low, 3 = AFC loop open, free-running mode.

50 Trap on: Y system chroma trap ON/OFF. Range 0-1, 0 = OFF, 1 = ON.

51 Tot on: Chroma TOT filter ON/OFF. Range 0-1, 0 = OFF, 1 = ON.

52 Y Drive: Y output gain control. Range: 0-31, 0 = -6.3dB, 31 = +3.5dB.

53 Shp-F0: Sharpness f0 selector. Range: 0-1, 0 = 3Mhz, 1 = 1.5Mhz.

54 Cd Mode2: V sync. signal pull-in speed selector Range: 0-1, 0 = Standard 1 = High speed.

55 U Ped: DC control of pedestal portion of U output (for video). Range: 0-15, 0 = -35mV, 7 = Center, 15 = +40mV.

56 V Ped: DC control of pedestal portion of V output (for video). Range: 0-15, 0 = -35mV, 7 = Center, 15 = +40mV.

57 Dc Tran: DC transmission ratio setting. Range: 0-7, 0 = Maximum (100%), 7 = Minimum (78%).

58 Pre Over: Sharpness preshoot/overshoot ratio setting. Range: 0-3, 0 = 1:1 (pre:over), 3 = 4:1 (pre:over).

59 Abl Cent: ABL center voltage control. Range: 0-3, 0 = Minimum, 3 = Maximum.

60 Abl: ABL gain control. Range: 0-1, 0 = Standard, 1 = Low.

61 Delay: Allows the following delay times to be added to the Y signal. Range 0-3, 0 = 0nS, 1 = 60nS 2 = 120nS, 3 = 180nS.

NTSC IC 221-1376 FROM 62 TO 111

62 Akb-T: Selection of timing pulse, which generates reference pulse (Set to NORMAL mode at power on). Range 0-1, 0 = NORMAL mode (reference pulse generated by SCP input only), 1 = V compression mode (reference pulse generated from VTIM-IN,HP-IN).

63 Blksw: Selection of H, V blanking system for RGB-OUT (Set to 0 at power on). Range: 0-1, 0 = Normal blanking mode (blanking up to VCE(sat) level, 1 = Blanking at value set by BLK-BOTTOM (Refer to the description of the BLK-BOTTOM register).

64 Mat-Out: Selection of type matrix conversion; selected signal is output from pins 76,77 and 78. A DC voltage of approximately 4V is output only for 3 of these modes. Range 0-3, 0 = THROUGH1 (when YCbCr is input, normal NTSC input), 1 = Matrix of YPbPr to YCbCr signal, 2 = Matrix conversion of GBR to YCbCr signal, 3 = THROUGH2 (GBR is input directly to internal RGB system, SVGA input).

65 Ycbcr/MAT: Selection of IN1 system signal or SELIN system signal for signal sent to Y color difference processing system. H and V sync signals are simultaneously selected and output. Range: 0-1, 0 = IN1 system input selected, 1 = SELIN system input selected.

66 Hysw: Switch for switching signal output to YG-OUT pin. Range: 0-1, 0 = For a sync on Y, sync on Green input, 1 = For a composite sync input.

67 Limit-Level: Limiter to cope with excessive high inputs. Range: 0-3, 0 = OFF, 1 = 111 IRE, 2 = 119 IRE, 3 = 127 IRE.

68 System: Signal frequency band switching; select the band in accordance with the TV System. Range: 0-3, 0 = NORMAL, 1 = FF, 2 = HD, 3 = FIX-HD (setting which gives greater importance to frequency response than 2).

69 Agin1: White output aging mode ON/OFF switch, 83 IRE flat signal is output from Y system. Range: 0-1, 0 = OFF, 1 = ON.

70 Agin2: All black output aging mode ON/OFF switch Input signals are cut off inside the Y/color difference signal processing system. As a result, the signals which were input to the RGB system are output. Range: 0-1, 0 = OFF, 1 = ON.

71 Ysym1sw: ON/OFF switching for YS/YM1 input pin (pin 45). Range: 0-1, 0 = ON, 1 = OFF.

72 Ym-Vm: Mute function ON/OFF switch for VM-OUT (pin 59) in YM ON block. Setting takes effect for both YS/YM1 (pin 45) and YS/YM-2 (pin 49). Range: 0-1, 0 = OFF : no muting, 1 = ON : muting.

73 R-Drive: R channel drive gain control. Range: 0-63, 0 = -4.2 dB, 29H = 0 dB, 3FH = +2.1 dB.

74 G-Drive: G channel drive gain control. Range: 0-63, 0 = -4.2 dB, 41 = 0 dB, 6.3 = +2.1 dB.

75 B-Drive: B channel drive gain control. Range: 0-63, 0 = -4.2 dB, 41 = 0 dB, 6.3 = +2.1 dB.

76 D-Col: Dynamic color ON/OFF switch. Range: 0 = OFF, 1 = ON.

77 Clpsw: Switch for selecting replacement pulse for color difference input pin offset control. Range 0-1, 0 = Pulse generated inside IC (replaced in period extending from rise of pulse which is input to HP-IN to the fall of pulse in 1), 1 = Clamping pulse which has been separated from SCP.

78 Clp-Msk: Switching of clamping pulse width in various ways (refer to description of H-WIDTH register) Gating at one of the SCP CLP pulses widths listed below. Range: 0-3, 0 = CLP, in its original form, serves as clamping pulse, 1 = Gating at SELH-OUT side of register H-WIDTH, 2 = Gating at clamping pulse generation block side of register H-WIDTH, 3 = Prohibited.

79 R-Cutoff: R channel cutoff control (Level control of IkIN (pin 41) R channel reference pulse). Range: 0-63, 0 = -9.1dB, 31 = 0 dB, 63 = +4.4 dB.

80 G-Cutoff: G channel cutoff control (Level control of IkIN (pin 41) G channel reference pulse). Range: 0-63, 0 = -9.1dB, 31 = 0 dB, 63 = +4.4 dB.

81 B-Cutoff: B channel cutoff control (Level control of IkIN (pin 41) B channel reference pulse). Range: 0-63, 0 = -9.1dB, 31 = 0 dB, 63 = +4.4 dB.

82 Abl-Mode: Switching of ABL mode. Range: 0-3, 0 = Picture ABL only mode, 1 = Picture/brightness ABL mode : Low, 2 = Picture/brightness ABL mode : Medium, 3 = Picture/brightness ABL mode : High.

83 Abl-Th: Adjustment of threshold voltage for ABL-IN (pin 44) input. Range 0-3, 0 = 1.3V, 3 = 3.3V.
81 Sub-Bright: Sub-brightness control. Setting for output DC bias of RGBOUT. Range 0-63, 0 = -13 IRE, 31 = CENTER, 63 = +13 IR.

84 Sub-Bright: Sub-brightness control.Range 0-63, settings for output DC bias out RGB OUT . 0 = -13IRE, 31 = CENTER, 63 = +13IRE.

85 Hsep-Sel: Sync separation system setting (valid for YG-IN (pin 26) input). Range: 0-1, 0 = Forced slice at sync tip +0.15V level, 1 = Charging/discharging for duty cycle.

86 Fix-Sync: Switch for setting sync identification circuit operation mode to auto or fixed. Range 0-3, 0 = Automatic identification (with priority sequence), 1 = Independent H, V sync signals used, 2 = Composite sync input used, 3 = Sync on Y, sync on Green inout used.

87 V-Tc: Setting for V sync separation time constant. Range: 0-3, 0 = 6 s, 1 = 8 s, 2 = 12 s, 3 = 18 s.

88 H-Width: Setting of output pulse width to HS-OUT and clamping pulse generation block. When the pulse width of the input sync signal is wider than the pulse width in each data, the wider of the two pulses is output. Range: 0-3.

89 Hs-Mask: Setting for whether H sync is to be added in V sync at HS-OUT (pin 29) and SELH-OUT (pin 79). Range: 0-1, 0 = Not added, 1 = Added.

90 Cr offset1: For canceling the offset between CrCb of IN1 and SELIN systems. Range: 0-15, 0 = -10 mV, 7 = 0 mV, 15 = +12 mV. This variable range is DC variation amount of respective input pins.

91 Cb offset1: For canceling the offset between CrCb of IN1 and SELIN systems. Range: 0-15, 0 = -10 mV, 7 = 0 mV, 15 = +12 mV. This variable range is DC variation amount of respective input pins.

92 Cr offset2: For canceling the offset between CrCb of IN1 and EXT systems. Range: 0-15, 0 = -10 mV, 7 = 0 mV, 15 = +12 mV. This variable range is DC variation amount of respective input pins.

SELH-OUT	Clamping Pulse Generation Block
0 = THROUGH	0 = 1.4 us
1 = 1.4 us	1 = 1.4 us
2 = 1.7 us	2 = 1.7 us
3 = 3.7 us	3 = 3.7 us

93 Cb offset2: For canceling the offset between CrCb of IN1 and EXT systems. Range: 0-15, 0 = -10 mV, 7 = 0 mV, 15 = +12 mV. This variable range is DC variation amount of respective input pins.

94 Sub-Con: Contrast gain control (Y system level adjustment). Range: 0-15, 0 = -1.9 dB, 7 = 0 dB, 1 5 = +1.7 dB.

95 Sub-Col: Color gain control. Range: 0-63, 0 = -2.1dB, 7 = 0 dB, 15 = +1.8 dB.

96 Sub-Hue: Tint center control. Range: 0-63, 0 = -8 degrees (Flesh color appears red), 8 = CENTER, 15 = +8 degrees (Flesh color appears green).

97 Cti-Level: Color difference signal edge enhancement setting. Range 0-3, 0 = OFF, 1 = Low, 2 = Medium, 3 = High.

98 R-Y/R: R-Y axis +(R-Y) component setting. Range: 0-15, 0 = Maximum, 15 = Minimum.

99 R-Y/B: R-Y axis -(B-Y) component setting. Range: 0-15, 0 = Maximum, 15 = Minimum.

100 G-Y/R: G-Y axis -(R-Y) component setting. Range: 0-15, 0 = Maximum, 15 = Minimum.

101 G-Y/B: G-Y axis -(B-Y) component setting. Range: 0-15, 0 = Maximum, 15 = Minimum.

Detection Axis Standard Values				
	R-Y/R	R-Y/B	G-Y/R	G-Y/B
NTSC-JAPAN	6	12	10	5
NTSC-USA	7	2	8	8
PAL/SECAM	13	15	8	4

102 Lrgb2-Level: LRGB2 system picture level control. Range: 0-15, 0 = -5 dB, 15 = 0 dB.

103 Gamma: Control of gamma correction amount. 0 = OFF. 15 = MAX (output increased by 15 IRE at input 40 IRE point).

104 Pabl-Level: Setting of level detection DC at RGB-OUT of PEAK-ABL. 0 = Level detection DC : 4.9 V. 15 = Level detection DC : 6.8 V.

105 Blk-Bottom: RGB-OUT bottom limiter level control (valid when BLKSW = 1). The limiter level is replaced with the reference DC for each H in RGB system, and it is defined by the drop voltage from that DC; it is not dependent on DC level control setting made by BRIGHT, etc. This limiter functions for all video signals. For further details, refer to the description of operation. Range: 0-15, 0 = Limiter level: -1.25 V, 15 = Limiter level: -0.65 V.

106 Sub-Shp: Sharpness center control (when SYSTEM = 0, SHARPNESS = 31, SHP-f0=1). Range: 0-3, 0 = 0 dB, 3 = + 4 dB.

107 Shp-F0: Sharpness f0 setting (automatically set to f0 best suited to each system). Range:0-1.

108 Pre/Over: Preshoot to overshoot ratio setting. Range: 0-3, 0 = PRE : OVER 1:1.3, 3 = PRE : OVER 3:1.

109 Lti-Level: Luminance signal edge enhancement setting. Range: 0-3, 0 = OFF, 1 = Low, 2 = Medium, 3 = High.

110 Dc-Tran: Y system DC transmission ratio setting. Range: 0-1, 0 = 100%, 1 = 77%. These variable range is the case when SCP clamp pulse duty is 4%.

111 D-Pic: Dynamic picture (black expansion) control. Range: 0-3, 0 = OFF, 1 = Low: inflection point 30 IRE, 2 = Medium: inflection point 35 IRE, 3 = High: inflection point 40 IRE.

NTSC IC 221-1378 FROM 112 TO 157

112 Not Used

113 Left_Blk: HBLK width control for left side of picture when HBLK_SW=0. Range 0-63, Initial value: 31.

114 Afc_Range: AFC pull-in range setting (100% Free-running frequency). Range: 0-1, Fixed Value: 0.

115 Fh_Sw: Horizontal Drive frequency range. Range: 0-1, Value: 0 for 15.75 KHz, NTSC mode, 1 for 37.9 KHz, Monitor mode.

116 Right_Blk: HBLK width control. Range: 0-63, Initial value: 31.

117 Afc_Mode: AFC loop gain control. Initial value: 31.

118 Clp: Clamp pulse phase setting. Range: 0-15, Initial value: 0.

0 = -12.7%	HBLK width maximum
31 = -7.7%	Center
63 = -27.7%	HBLK width minimum

119 Afc_Comp: Compensation amount setting for H position HV fluctuation. Initial value: 7.

120 H_Position: Horizontal position adjustment Variable in factory menu. Range: 0-63, Initial value: 31.

121 Hblk_Sw: HBLK width control ON/OFF. Range: 0-1, Fixed Value: 0.

122 V_Angle: Vertical line slope compensation. Range: 0-63, Initial value: 31.

123 V_Bow: Vertical line bow compensation. Range: 0-63, Initial value: 31.

124 H_Comp: Compensation amount setting for horizontal picture size HV fluctuation. Range: 0-15, Fixed Value: 4.

125 Fhadj: Horizontal free-running frequency line adjustment. Range: 0-15, Initial value: 7.

126 H_Size: Horizontal amplitude adjustment Variable in factory menu. Range: 0-63, Initial value: 0.

127 Pin_Phase: Horizontal trapezoidal distortion compensation Variable in factory menu. Range: 0-63, Initial value: 31.

0 = 16% advance	Horizontal size for top of picture increases Horizontal size for bottom of picture
31 = 0%	Ratio of time for 1 field when V_ASPECT = 0
63 = 16% delay	Horizontal size for top size decreases Horizontal size for bottom of picture

128 Up_Pin: Horizontal pin distortion compensation Variable in factory menu. Range: 0-63, Initial value: 31.

129 Lo_Pin: Horizontal pin distortion compensation Variable in factory menu. Range: 0-63, Initial value: 31.

130 Up_Cpin: Horizontal pin distortion compensation Variable in factory menu. Range: 0-63, Initial value: 31.

131 Lo_Cpin: Horizontal pin distortion compensation Variable in factory menu. Range: 0-63, Initial value: 31.

132 V_Para1_Dc: General-purpose V parabola 1 DC bias control. Range: 0-15, Fixed Value: 7.

133 V_Para1_Amp: General-purpose V parabola 1 gain control. Range: 0-15, Fixed Value: 7.

134 V_Para2_Dc: General-purpose V parabola 2 DC bias control. Range: 0-63, Fixed Value: 31.

135 V_Para2_Phase: General purpose V parabola 2 SAW component amplitude control. Range: 0-63, Fixed Value: 31.

136 V_Para2_Amp: General purpose V parabola 2 wave amplitude control. Range: 0-63, Fixed Value: 31.

137 V_Size: Vertical amplitude adjustment Variable in factory menu. Range: 0-63, Initial value: 31.

0 = -14%	Vertical picture size decreases
31 = 0%	Amplitude: 1.0Vp-p. center DC=3.5V(when V_ASPECT= 0)
63 = +14%	Vertical picture size increases

138 Voff: V_DRV signal oscillation stop ON/OFF switch. Range: 0-1, Fixed Value: 1H.

139 V_Position: Vertical position adjustment Variable in factory menu. Range: 0-63, Initial value: 31.

140 Zoom_Sw: Zoom mode ON/OFF switch for 16:9 CRT. Range: 0-1, Fixed Value: 0.

141 Zcut: VBLK and VTIM signal jitter cut when BLK_SW = 00. Fixed Value: 0.

142 V_S_Corr: Vertical S correction. Range: 0-15, Initial value: 0.

143 V_Lin: Vertical linearity adjustment. Range: 0-15, Initial value: 7.

0 = 85%	(Bottom/top of picture) Top of picture expanded; bottom of picture compressed
7 = 0%	(Bottom/top of picture)
15 = 115%	(Bottom/top of picture) Top of picture compressed; bottom of picture expanded

144 V_Freq: VOSC vertical frequency. Range: 0-15, Fixed Value: 3 for 60z

145 V_Comp: Compensation amount setting for vertical HV fluctuation. Range: 0-15, Initial value: 7.

146 Up_Vlin: Vertical linearity control. Range: 0-15, Initial value: 0.

147 Lo_Vlin: Vertical linearity control. Range: 0-15, Initial value: 0.

148 V_Aspect: Aspect control ratio. Range: 0-63, Fixed Value: 47 for 4:3 CRT.

149 V_Free: Switch for setting V system to free-running regardless of whether VSYNC is input. Range: 0-1, Initial value: 0.

150 Jmp_Sw: Reference jump mode ON/OFF. Range: 0-1, Fixed Value: 00.

151 Vscroll: Vertical picture scroll control. Range: 0-63, Initial value: 31.

152 Max_Line: Number of free-running lines setting. Range: 0-254. Value: 33 for 15.75 KHz, NTSC mode. 16 for 37.9 KHz, monitor mode.

153V_Front_Blk: VBLK width control. Range: 0-127. Value: 88 for 15.75 KHz, NTSC mode. 22 for 37.9 KHz, monitor mode.

154 Blk_Sw: Switch for selecting whether to use V_BACK_BLK, VTIM and V_FRONT_BLK registers, or to use the timing at which VD is sliced inside the IC when ZOOM_SW = 1. Range: 0-1, Fixed Value: 1.

155 V_Back_Blk: VBLK width control. Range: 0-127. Value: 40 for 15.75 KHz, NTSC mode. 22 for 37.9 KHz, monitor mode.

156 Non_Inter: Free-running interlace/non-interlace setting during free running. Range: 0-1. Value: 0 for 15.75 KHz, NTSC mode. 1 for 37.9 KHz, monitor mode.

157 Vtim: VTIM fall position control from start of V_DRV retrace. Initial value: 32.

SVGA IC 221-1376 FROM 158 TO 168

158 Mat-Out: Same description as item 64.

159 R-Drive: Same description as item 73.

160 G-Drive: Same description as item 74.

161 B-Drive: Same description as item 75.

162 R-Cutoff: Same description as item 79.

163 G-Cutoff: Same description as item 80.

164 B-Cutoff: Same description as item 81.

165 Sub-Bright: Same description as item 84.

166 Fix-Sync: Same description as item 86.

167 H-Width: Same description as item 88.

168 Blk-Bottom: Same description as item 105.

SVGA IC 221-1378 FROM 169 TO 204

169 Not Used

170 Left_Blk: Same description as item 113.

171 Right_Blk: Same description as item 116.

172 Fh_Sw: Same description as item 115.

173 Clp: Same description as item 118.

174 H_Position: Same description as item 120.

175 V_Angle: Same description as item 122.

176 V_Bow: Same description as item 123.

177 H_Comp: Same description as item 124.

178 Fhadj: Same description as item 125.

179 H_Size: Same description as item 126.

180 Pin_Phase: Same description as item 127.

181 Up_Pin: Same description as item 128.

182 Lo_Pin: Same description as item 129.

183 Up_Cpin: Same description as item 130.

184 Lo_Cpin: Same description as item 131.

185 V_Para1_Dc: Same description as item 132.

186 V_Para_Amp: Same description as item 133.

187 V_Para2_Dc: Same description as item 134.

188 V_Para2_Phase: Same description as item 135.

189 V_Para2_Amp: Same description as item 136.

190 V_Size: Same description as item 137.

191 V_Position: Same description as item 139.

192 V_S_Corr: Same description as item 142.

FACTORY MENU TABLES

ITEM	RANGE	H27E46DT	H32E46DT	H36E46DT
00 FACT MENU	0-1	1	1	1
01 PRESET PX	0-1	1	1	1
02 PRESET AX	0-1	1	1	1
03 POWER MANAGE	0-7	0	0	0
04 VERT POS	0-30	12	15	12
05 HORZ POS	0-90	68	70	68
06 BAND/AFC	0-7	0	0	0
07 MIN VOLUME	0-63	0	0	0
08 MAX VOLUME	0-63	63	63	63
09 AC ON	0-1	0	0	0
10 KEY DEFEAT	0-1	0	0	0
11 STRT CH	0-255	255	255	255
12 STRT VOL	0-255	255	255	255
13 NOT USED				
14 CHAN LOCK	0-1	0	0	0
15 GHOST CH	0-1	0	0	0
16 NOT USED				
17 TEXT MODE	0-1	1	1	1
18 SLEEP TIMER	0-1	1	1	1
19 ALARM	0-1	1	1	1
20 CH. OVER RIDE	0-1	1	1	1
21 OLD OCV	0-1	0	0	0
22 CAPTION LOCK	0-1	0	0	0
23 FUNCTION PRE	0-3	0	0	0
24 FEATURE LEVEL	0-1	1	1	1
25 NTSC SCANCARD	0-1	0	0	0
26 NOT USED				
27 MUTE DISABLE	0-1	0	0	0
28 V-CHIP	0-1	1	1	1
29 MAX BLOCK HRS	0-99	12	12	12
30 STRT AUX SRCE	0-5	4	4	4
31 MUTE TIME	0-254	200	200	200
32 Y/C LOOP OUT	0-1	1	1	1
33 AUTO COMPORT	0-1	1	1	1
34 NOT USED				
35 A ATT	0-15	7	7	7
36 A VCO	0-63	31	31	31
37 A FILTER	0-63	31	31	31
38 A SPECTRAL	0-63	31	31	31
39 WIDE BAND	0-63	31	31	31
40 HUE	0-63	32	32	32
41 DPIC OFF	0-1	0	0	0
42 COLOR	0-63	18	18	18
43 CANAL	0-1	0	0	0
44 SHARPNESS	0-15	9	9	9
45 SUB CONT	0-15	7	7	7
46 SUB HUE	0-15	7	7	7
47 SUB COLOR	0-15	7	7	7
48 CTRPADJ	0-15	7	7	7
49 AFC	0-3	0	0	0
50 TRAP ON	0-1	0	0	0

ITEM	RANGE	H27E46DT	H32E46DT	H36E46DT
51 TOT ON	0-1	1	1	1
52 Y DRIVE	0-31	5	5	5
53 SHP-FO	0-1	0	0	0
54 CD MODE2	0-1	0	0	0
55 U PED	0-15	7	7	7
56 V PED	0-15	7	7	7
57 DC TRAN	0-7	0	0	0
58 PRE OVER	0-3	2	2	2
59 ABL CENT	0-3	0	0	0
60 ABL	0-1	1	1	1
61 DELAY	0-3	0	0	0
62 AKB-T	0-1	1	1	1
63 BLKSW	0-1	1	1	1
64 MAT-OUT	0-3	0	0	0
65 YCbCr/MAT	0-1	1	1	1
66 HYSW	0-1	0	0	0
67 LIMIT LEVEL	0-3	0	0	0
68 SYSTEM	0-3	0	0	0
69 AGIN G1	0-1	0	0	0
70 AGIN G2	0-1	0	0	0
71 YSYM1SW	0-1	1	1	1
72 YM-VM	0-1	1	1	1
73 R-DRIVE	0-63	30	30	30
74 G-DRIVE	0-63	25	25	25
75 B-DRIVE	0-63	20	20	20
76 D-COL	0-1	0	0	0
77 CLPSW	0-1	1	1	1
78 CLP-MSK	0-3	0	0	0
79 R-CUTOFF	0-63	10	10	10
80 G-CUTOFF	0-63	2	2	2
81 B-CUTOFF	0-63	0	0	0
82 ABL-MODE	0-3	0	0	0
83 ABL-TH	0-3	2	2	2
84 SUB-BRIGTH	0-63	31	31	31
85 HSEP-SEL	0-1	0	0	0
86 FIX-SYNC	0-3	0	0	0
87 V-TC	0-3	3	3	3
88 H-WIDTH	0-3	3	3	3
89 HS-MASK	0-1	1	1	1
90 CR-OFFSET1	0-15	7	7	7
91 CB-OFFSET1	0-15	7	7	7
92 CR-OFFSET2	0-15	7	7	7
93 CB-OFFSET2	0-15	7	7	7
94 SUB- CON	0-15	7	7	7
95 SUB-COL	0-15	7	7	7
96 SUB-HUE	0-15	8	8	8
97 CTI-LEVEL	0-3	3	3	3
98 R-Y/R	0-15	7	7	7
99 R-Y/B	0-15	2	2	2
100 G-Y/R	0-15	8	8	8

ITEM	RANGE	H27E46DT	H32E46DT	H36E46DT
101 G-Y/B	0-15	11	11	11
102 LRGB2-LEVEL	0-15	3	3	3
103 GAMMA	0-15	0	0	0
104 PABL-LEVEL	0-15	6	6	6
105 BLK-BOTTOM	0-15	15	15	15
106 SUB-SHP	0-3	3	3	3
107 SHP-FO	0-3	0	0	0
108 PRE/OVER	0-3	0	0	0
109 LTI/LEVEL	0-3	1	1	1
110 DC-TRAN	0-7	2	2	2
111 D-PIC	0-3	3	3	3
112 H-FREQ	0-254	3	3	3
113 LEFT-BLK	0-63	28	28	28
114 AFC-RANGE	0-1	1	1	1
115 FH-SW	0-1	0	0	0
116 RIGHT-BLK	0-63	63	63	63
117 AFC-MODE	0-3	0	0	0
118 CLP	0-15	7	7	7
119 AFC-COMP	0-15	7	7	7
120 H-POSITION	0-63	21	21	21
121 HBLK-SW	0-1	0	0	0
122 V-ANGLE	0-63	30	30	30
123 V-BOW	0-63	32	32	32
124 H-COMP	0-15	0	0	0
125 FHADJ	0-15	8	8	8
126 H-SIZE	0-59	32	32	32
127 PIN-PHASE	0-63	32	32	32
128 UP-PIN	0-63	31	31	31
129 LO-PIN	0-63	31	31	31
130 UP-CPIN	0-63	31	31	29
131 LO-CPIN	0-63	33	31	33
132 V-PARA1-DC	0-15	0	0	0
133 V-PARA1-AMP	0-15	7	7	7
134 V-PARA2-DC	0-63	0	0	0
135 V-PARA2-PHASE	0-63	37	30	30
136 V-PARA2--AMP	0-63	0	0	0
137 V-SIZE	0-63	52	43	25
138 V-OFF	0-1	1	1	1
139 V- POSITION	0-63	43	39	37
140 ZOOM-SW	0-1	0	0	0
141 Z-CUT	0-1	0	0	0
142 V-S-CORR	0-15	0	0	0
143 V-LIN	0-15	5	0	0
144 V-FREQ	0-15	3	3	3
145 V-COMP	0-15	0	0	0
146 UP-VLIN	0-15	8	5	4
147 LO VLIN	0-15	5	4	4
148 V-ASPECT	0-63	56	60	47
149 V-FREE	0-1	0	0	0
150 JUMP-SW	0-1	0	0	0

ITEM	RANGE	H27E46DT	H32E46DT	H36E46DT
151 V-SCROLL	0-63	31	31	31
152 MAX- LINE	70-200	78	78	78
153 V-FRONT-BLK	0-127	7	7	7
154 BLK-SW	0-1	1	1	1
155 V-BACK-BLK	0-127	14	14	14
156 MON INTER	0-1	0	0	0
157 VTIM	0-254	22	22	22
158 MAT-OUT	0-3	3	3	3
159 R-DRIVE	5 59	30	30	30
160 G-DRIVE	5 59	25	25	25
161 B-DRIVE	5 59	20	20	20
162 R-CUTOFF	0-63	10	10	10
163 G-CUTOFF	0-63	2	2	2
164 B-CUTOFF	0-63	0	0	0
165 SUB-BRIGTH	0-63	31	31	31
166 FIX-SYNC	0-3	0	0	0
167 H-WIDTH	0-3	0	0	0
168 BLK-BOTTOM	0-15	15	15	15
169 H-FREQ	0-254	32	32	32
170 LEFT-BLK	0-63	28	28	28
171 RIGHT-BLK	0-63	18	18	18
172 FH-SW	0-1	0	0	0
173 CLP	0-15	9	9	9
174 H-POSITION	0-63	33	29	30
175 V-POSITION	0-63	30	31	30
176 V-BOW	0-63	30	31	24
177 H-COMP	0-15	0	0	0
178 FHADJ	0-15	8	8	8
179 H-SIZE	0-59	36	22	40
180 PIN-PHASE	0-63	30	31	29
181 UP-PIN	0-63	31	31	31
182 LO-PIN	0-63	31	31	31
183 UP-CPIN	0-63	30	31	30
184 LO-CPIN	0-63	30	31	33
185 V-PARA1-DC	0-15	7	7	7
186 V-PARA1-AMP	0-15	7	7	7
187 V-PARA2-DC	0-63	0	0	0
188 V-PARA2-PHASE	0-63	30	30	30
189 V-PARA2-AMP	0-63	0	0	0
190 V SIZE	0-59	40	18	21
191 V-POSITION	0-63	43	42	35
192 V-S-CORR	0-15	0	3	0
193 V-LIN	0-15	8	3	0
194 V-FREQ	0-15	3	3	3
195 V-COMP	0-15	0	0	0
196 UP-VLIN	0-15	5	3	9
197 LO-VLIN	0-15	4	2	4
198 V-ASPECT	0-63	45	47	29
199 V-SCROLL	0-63	31	31	31
200 MAX LINE	160-254	190	190	190

ITEM	RANGE	H27E46DT	H32E46DT	H36E46DT
201 V-FRONT-BLK	0-127	0	0	0
202 V-BACK-BLK	0-127	23	23	23
203 NONINTER	0-1	1	1	1
204 VTIM	0-254	39	39	39
205 POLL RATE	20-169	94	94	94
206 TIMING PULSE	186-227	207	207	207
207 ACK PULSE	0-1	0	0	0
208 AUX STATUS	0-1	0	0	0
209 AUTO COMPPORT	0-1	0	0	0
210 SVID ENABLE	0-1	1	1	1
211 DIS. SETUP M.	0-1	0	0	0
212 DIS. AUDIO M.	0-1	0	0	0
213 DIS. VIDEO M.	0-1	0	0	0
214 DIS. VCHIP M.	0-1	0	0	0
215 DIS. SRCE M.	0-1	0	0	0
216 DIS. CH-TIME	0-1	0	0	0
217 BCK. CH-TIME	0-7	1	1	1
218 FOR. CH-TIME	0-7	1	1	1
219 EN. CH-TIME	0-1	1	1	1
220 CH TIME SIZE	0-1	0	0	0
221 CH NOT AVBLE	0-1	0	0	0
222 EN. TIMER	0-1	1	1	1
223 FRNT AUX EN.	0-1	1	1	1
224 UPN MSB	0-FF	--	--	--
225 UPN MSB-1	0-FF	--	--	--
226 UPN MSB-2	0-FF	--	--	--
227 UPN LSB	0-FF	--	--	--
228 AIR AFT	0-1	1	1	1

CHASSIS OVERVIEW

CONNECTIONS

This chassis has two means of A/V connectivity, one jackpack in the front and one in the back. The rear jackpack accommodates composite video, Y/C (super video), RGB Computer, and TV RF inputs. The front jackpack has only composite video and RGB computer inputs.

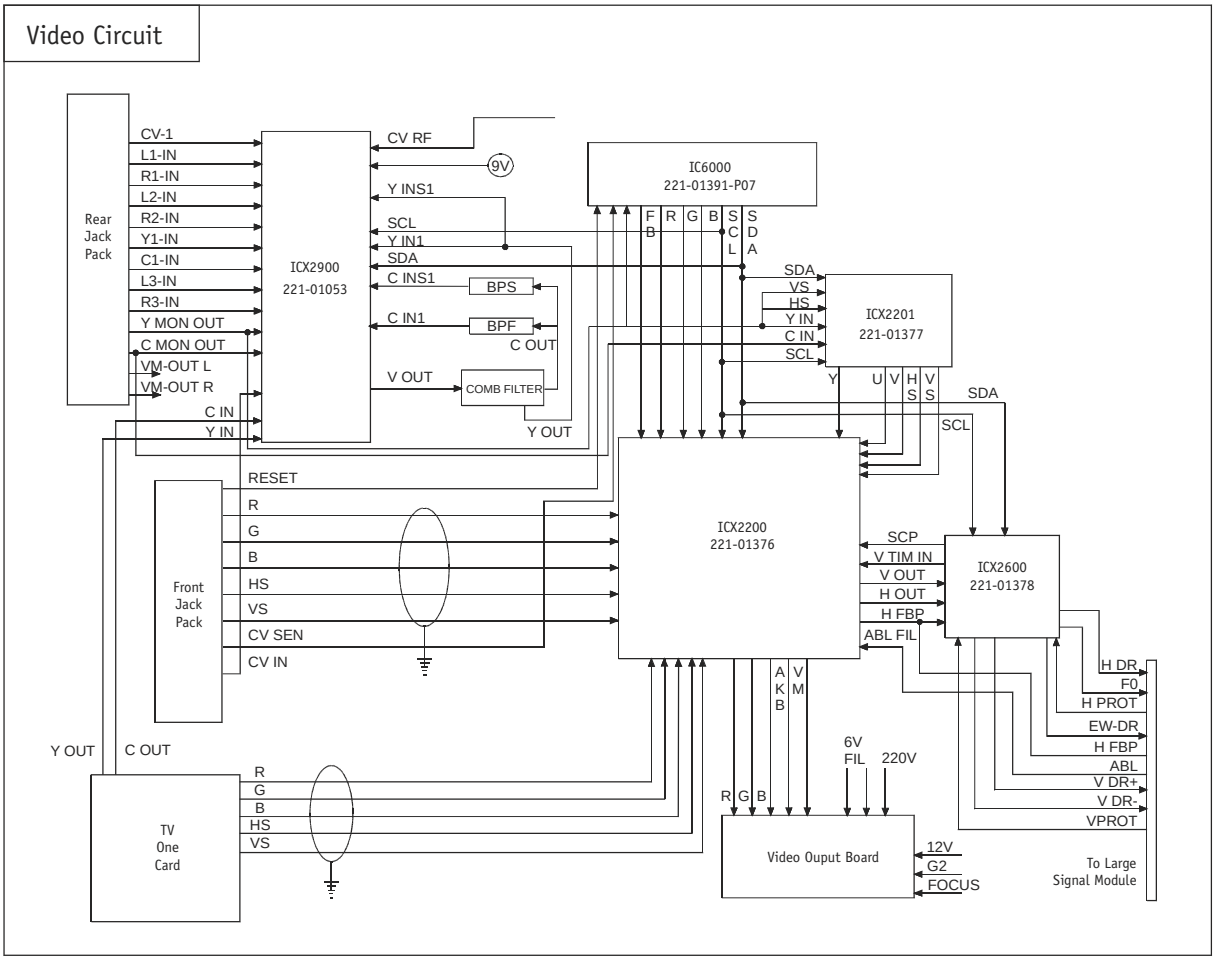
SIGNALS

Two types of signals, NTSC and SVGA, are processed in the set. NTSC signals enter by four inputs.

- CV RF: The IF section sends the composite video to the A/V switch (ICX2900) at pin 53 (VinE4).
- CV-1: Fed from the rear jackpack to the A/V switch at input pin 7 (VinS1).
- CV-4: This input, called Camport, is fed to the A/V switch via pin 5 (VinE1).
- Y1-IN: This is the luminance input of the Y/C (super video) connector and is fed to the A/V switch through pin 15 (YinS2).
- C1-IN: This is the Chroma part of the Y/C (super video) connector and is fed to the A/V switch through pin 17 (CinS2).

All of these signals must be input to the A/V switch with a 1 Volt Peak-to-Peak (Vp-p) level. The microprocessor selects the signal through the I^2C bus. If the signal is composite video, it is sent to the comb filter to separate the luminance and chroma components. The luminance signal is fed back to the A/V switch at pins 9 (YinS1) and 48 (Yin1). The chroma signal is sent to a pair of band-pass filters, one for the composite video inputs and one for the COMPOSITE VIDEO RF (because the two signals have different levels). Then the chroma is fed back to the A/V switch via pins 11 (CinS1) and 40 (Cin1).

The correct signal is selected by the microprocessor and the A/V switch sends it to pins 44 (Yout1) and 42 (Cout1) and to ICX2201.



INTEGRATED CIRCUITS

ICX2201 is a chroma decoder. It receives luminance and chroma signals and decodes them to YUV video with synchrony. The diagram shows the connections of the luminance signal to the synchrony inputs. This is because the chip extracts the horizontal and vertical sync pulses from the luminance composite sync.

The YUV video and sync from the ICX2201 are fed to the ICX2200 at pins 5 (IN2-3), 4 (IN2-2), 3 (IN2-1), 1 (IN2-H), and 2 (IN2-V).

The ICX2200 is an RGB video processor and switch that supports multi-scan capabilities. This switch has four inputs:

- IN2 (pins 1-5): This input is used for the YUV video from ICX2201. It is selected by the microprocessor whenever the set is in NTSC mode by setting the input-SEL register to 0.
- IN3 (pins 7-11): This input is connected to the rear jackpack through connector 8VGA2. When this input is selected the microprocessor sets the input-SEL register to 1.
- IN4 (pins 13-17): This input is connected to the front jackpack connector 6F1 located in front of the set. The microprocessor selects it by setting the input-SEL register to 2.
- IN5 (pins 19-23): Not used.

The output of the ICX2200 is three lines of video (RGB) and two lines of sync (HV). The RGB lines are connected to the video output board and the Sync (HV) lines are connected to the input of ICX2600.

The video output board gets the RGB output from the ICX2200 to drive the CRT. It also returns a signal (IK – Cathode current) to pin 41 (IK-IN) of ICX2200. This is used to control the correct black level of the three amplifiers (AKB circuit).

ICX2600 is a deflection processor and compensation circuit for multi-scan signals. This IC accepts the output sync from ICX2200 and generates the signals needed for the large signal deflection board. Since CS Chassis sets use only two formats (NTSC using 15KHz at 60Hz, and 37.9KHz at 60Hz), the IC uses point scan mode and all other frequencies are set as invalid.

ICX2600 generates signals:

- Horizontal drive (H-DRV), East-West correction (EW), and positive and negative Vertical ramps (+VDRIVE, -VDRIVE) used in the horizontal and vertical deflection circuit.
- Vertical Parabola (VPARAB) and Horizontal Sawtooth (Hsaw) are both used in the dynamic focus circuit.
- Two signals, F0 and FH_STATUS, use the deflection circuit to switch the frequency of the deflection circuit between 15KHz and 37.9KHz.
- The sandcastle pulse (SCP) and Vertical timing pulse (VTIM) are fed back to the ICX2200. This is used as a reference for the internal blanking circuit and the AKB timing generator.

And accepts from the deflection circuit:

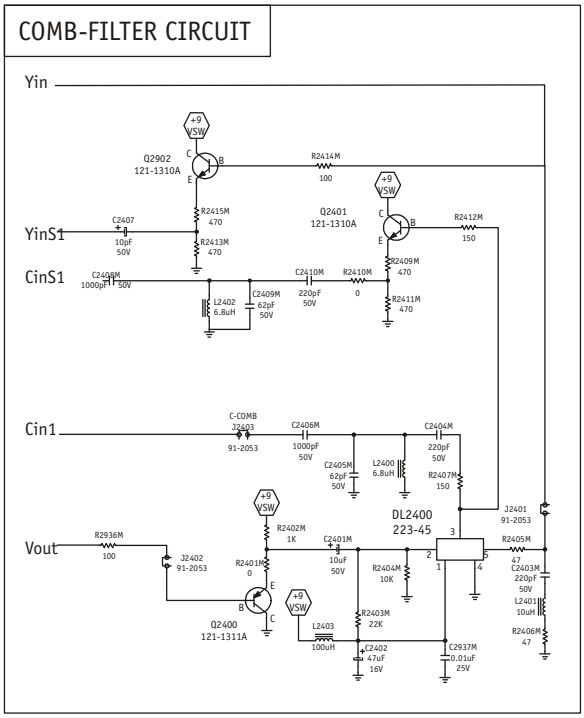
- The fly back pulse (H-FBP) is used for synchronizing the deflection with the H-DRV pulse generated in the IC.
- H-PROT signal is used in shutdown protection.
- V-PROT is used to protect the CRT.
- The ABL signal is used by the ICX2200 and ICX2600 to regulate the size of the vertical and horizontal size and the current of electronic beam.

VIDEO PROCESSING

COMB FILTER

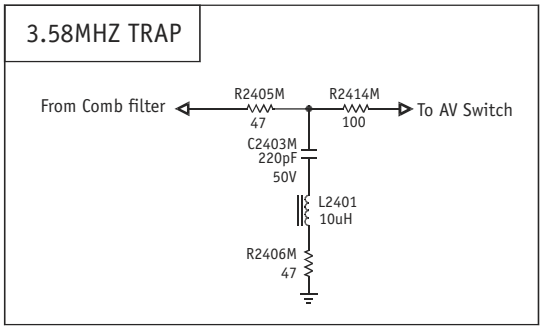
The function of the Glass Comb Filter is to separate the composite video signal into Luminance (Y) and Chrominance (C) signals with a minimum amount of Cross Luminance and Cross Chrominance. The Glass Comb Filter is a hybrid integrated circuit together with a glass delay line combined into a five-pin package. The filter converts the composite signal to an acoustic signal using a piezoelectric transducer. The acoustic signal is sent through the glass delay line where it is delayed by one horizontal scan line. It is then converted back to an electrical signal. This is called 1H delay, which corresponds to one horizontal scan line time period. Hence the name 1H COMB. This current undelayed line is summed with the delayed line to give Y_COMB and subtracted from the delayed line to give C_COMB. This is made possible by the interleaving of Luminance and Chrominance signals during one horizontal scan line.

The glass comb filter receives composite video from ICX2900 pin 36 (Vout2) and separates it into Luma (Y) and Chroma (C) signals. The Luma (Y) signal passes through a 3.58MHz Trap in order to eliminate the residual signal of Chrominance, and then is sent back to pin 9 (YinS1) and pin 48 (Yin1) input with different levels (because the levels of the signals are different to RF and CV). The Chroma (C) signal goes to two different 3.58MHz Band Pass Filters decoupled by an emitter follower (one for RF and the other for CV) in order to eliminate the Luminance signal from the chroma signal of each input. Then it is sent to pins 11 (CinS1) and 40 (Cin1) inputs of ICX2900.



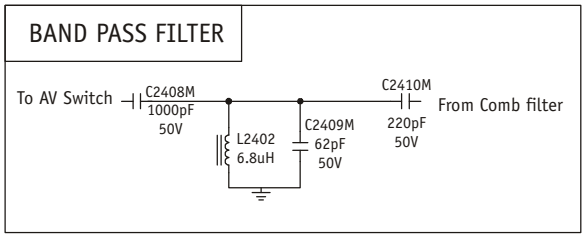
3.58 MHZ TRAP

The Chrominance information is 3.58 MHz and has a 1-MHz bandwidth (BW). Since the video processor requires that Luminance and Chrominance be separated, it is necessary to use a filter to eliminate signals in that frequency range. In this circuit R2414M adjusts BW, R2406M adjusts attenuation and BW, L2401 and C2403M adjust BW and resonance frequency.



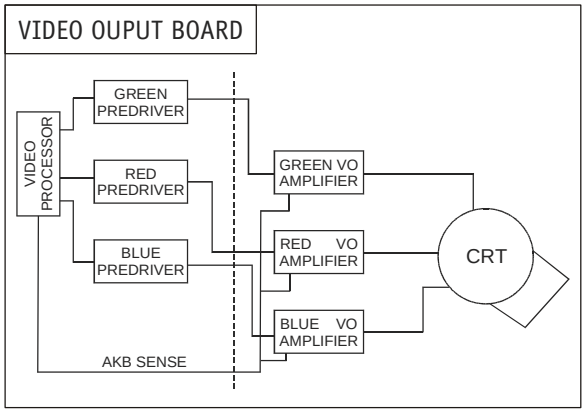
BAND PASS FILTER

To obtain the chroma information from a composite video signal a BPF is used. The theory says that the filter is centered at 3.58 MHz with 1MHz bandwidth. Each component on a filter can affect the appearance of the image. The next circuit shown is the band pass circuit.



VIDEO OUTPUT BOARD

The signal is first uncoupled at the output of the video processor. Three transistors in the emitter follower configuration do this. Then the signal is amplified to the levels required for a good image on the CRT by the Video output board. On each amplifier there is a dedicated section for sensing the cathode current for the AKB system.

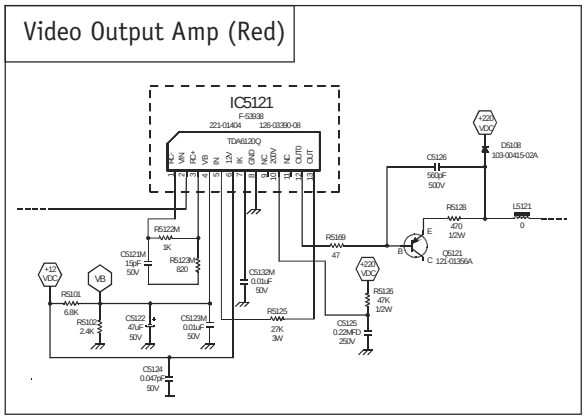


CRT/VIDEO MODULE

The Video Output Amplifier circuitry is divided into 4 sections. One section is the support circuitry for the CRT (G2 circuit, for example). The other sections are RGB amplifiers (one for each color signal). The locations for all the components are numbered according to these four sections. x510x references components in CRT support circuitry, x520x components are the Red section, x514x components are the Green section, and x516x components are the Blue section. So, for example, resistor R5125 in the Red section has the same function as R5145 in the Green section and R5165 in the blue section. For the purpose of analysis, the explanation below is based on the Red section.

The principal part of the Red amplifier is IC5121. This IC is an operational amplifier, configured as an inverting amplifier. The inverting input is on pin 2 and the non-inverting input is on pin 4. The Feedback resistor is R5125. It has a gain peaking network between pin 1 and pin 3. This network is internally connected to the collectors of the differential input transistors.

The input signal is connected to the inverting input of the amplifier through resistor R5121 to avoid Hi frequency oscillations. The non-inverting input is connected to a voltage bias formed by resistors R5101 and R5102.



The C5122 is for AC decoupling and C5123 is for Hi Frequency filter purposes (one for each IC). The IC takes this voltage bias as a reference voltage for the input signal. Therefore, by means of moving this reference voltage, the black level is established. The reference voltage is the same for the three-color amplifiers.

The cathode output is from pin 12 of the IC. This signal is passed through transistor Q5121 with the purpose of sampling the cathode current. This cathode output also uses resistors R5127, R5128, and the coil L5121 for peaking improvement.

VIDEO OUTPUT AMP IC

IC5121 consists of one monolithic video output amplifier. It is called a transadmittance-transimpedance amplifier because it can be split into two amplifier stages in series. The first stage is a voltage to current stage (transadmittance) and the second stage is a current to voltage stage (transimpedance).

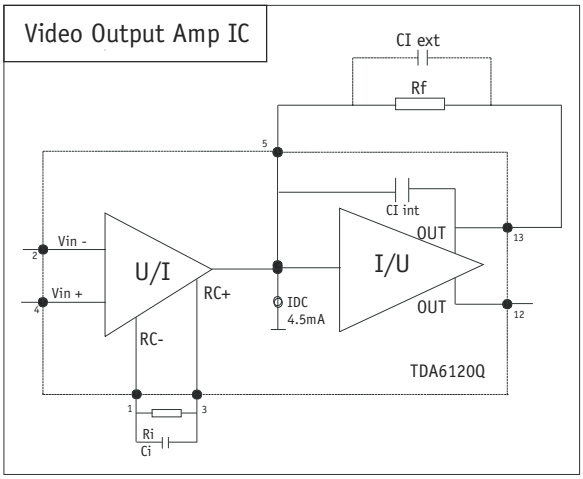
At the second stage voltage to current feedback is applied by resistor (R5125) connected from out (pin 13) to in (pin 5). The transadmittance of the first stage can be chosen by means of a resistor between pin 1 and pin 3, represented on this circuit by R5122.

The signal input is through a differential pair of transistors. The signal is connected on pin 2 (Vin). The input configuration consists of a bipolar NPN transistor in a long tailed pair configuration. Input current is 30µA type.

Black current data pin (7) is not used. Instead of this pin, the current is sensed externally by means of transistor Q5121.

Video output current is delivered by a quasi-complementary class A/B push-pull stage designed in DMOS technology which can source and sink a current of 100mA for video output voltages of 125Vp-p. A feature of this output stage is the low saturation voltage (typ. 4V) and the low voltage drop at high level (typ. Vdd-6V).

Frequency response is improved by means of a capacitor (C5121) in series with a resistor (R5123) connected between pins 1 and 3 of the IC. The values of these elements are a compromise between bandwidth, overshoot, and ringing.

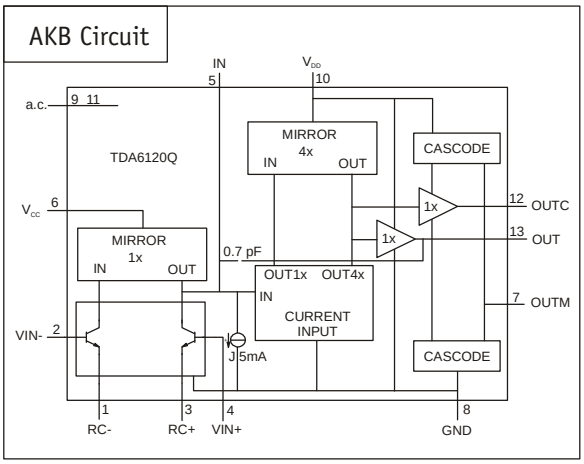


AKB OPERATION

The auto cut off system is intended for stabilization of the black current and to compensate for CRT aging. The video processor adds 3 pulses on the last portion of the vertical blanking interval (one for each color). The currents on the cathode for each pulse are sensed and sent back to the video processor for correction. Each pulse is actually a complete horizontal line with a video level of approximately 8 Ire's. These pulses are slightly closing the vertical scan. They appear as a set of 3 lines on the top of the image.

The Cathode current is sensed by a PNP transistor (Q51X1). The three sensed currents are tied together and send back to the video processor. On the main board this current signal is converted to voltage and sent to the video processor (pin 41 of ICX2200).

The video processor internally resolves the current level of each color, compares it to its internal reference, and makes an adjustment.



The factory adjust of cut off is based on this system. The processor moves the reference pulse according to the level indicated on the cut off register. When the reference pulse is moved, the AKB system moves the black level of the signal. This is the way it adjusts the white balance at low contrast.

ABL CIRCUIT

ABL (Automatic Blanking Level) and ACL (Automatic Contrast Level) are circuits designed to protect the CRT against over-current of electron beams that will burn the screen phosphors. Both circuits limit the current flowing to the screen. For 27-inch sets, the beam current is limited to 1.5 mA. For 32 and 36-inch sets the beam current is limited to 1.6 mA. The ABL controls the current by affecting the black level and the ACL by limiting the contrast.

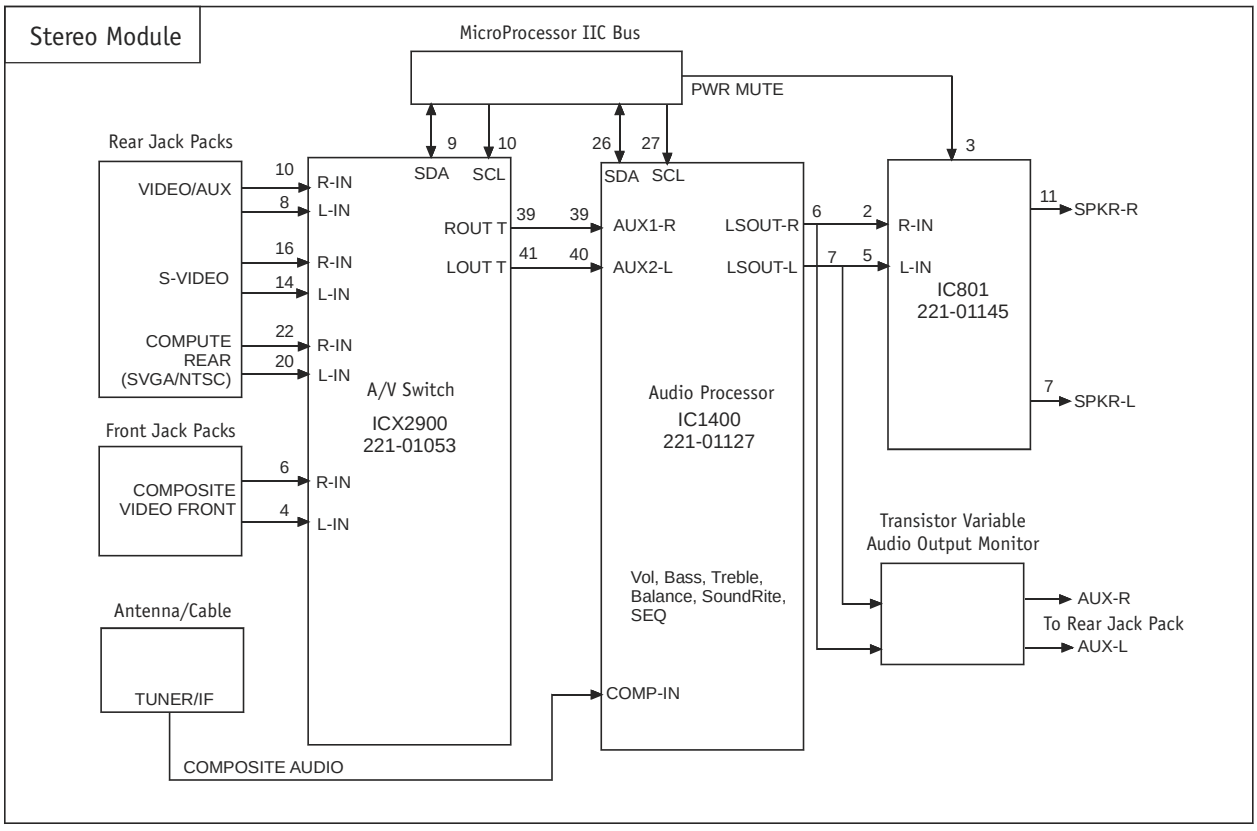
The ICX2200 Video processor has two ABL modes of operation: Picture only and Picture/Brightness. The first one only affects the contrast level. This first mode is also called ACL. The second option affects Contrast and Brightness. This option is a mix of ABL and ACL. Both options are selected by software. The Picture only mode is fixed.

AUDIO PROCESSING

STEREO MODULE

There are five different Audio sources: Antenna/Cable, Aux video, S-Video, Rear Computer, and Front Computer/ Front Video.

The Tuner/IF section processes the Antenna/Cable signal. It then passes as Composed Audio to the audio processor to be demodulated.



At the front jackpack one pair of audio jacks is used with both the Computer and Aux. Video inputs. (If both video inputs are in use the Aux. Video is selected as default input.)

The rear jackpack includes one set of audio jacks for the S-Video, another set of audio jacks for the Aux. Video input, and a third pair for the RGB Computer input.

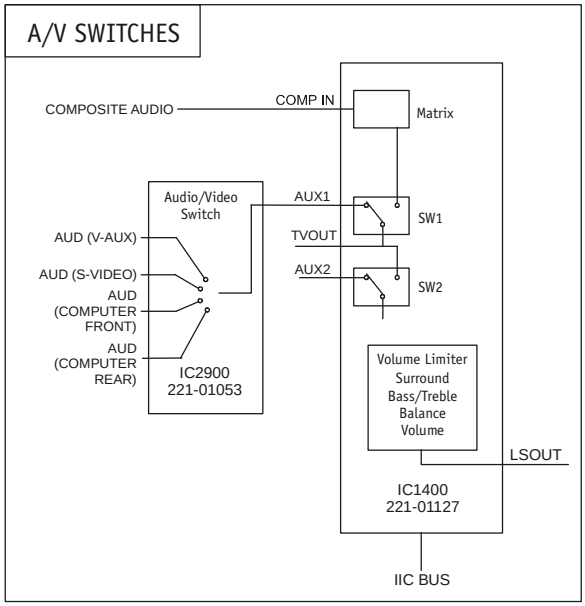
The Audio processor IC1400 switches between the Composite Audio input on pin 19 (Comp-in) from Tuner/ IF section and pins 39 & 40 (AUX1-R & AUX1-L, the L/ R channels from the A/V Switch ICX2900). The A/V Switch chooses from among four inputs from external audio sources (Rear and Front jackpacks). The I²C bus controls both IC's. The power amplifier IC801 and the variable output monitor stage take the Left and Right channels from the audio processor Lsout-L (pin 7) and Lsout-R (pin 6) outputs.

SWITCH THEORY

Audio source selection for CS chassis sets is made through two internal switches SW1 and SW2 inside the IC1400 audio processor. These switches are controlled by EXT1 and EXT2 registers to select COMPIN Tuner /IF signal, AUX1 (Audio/Video switch), or AUX2 (Not used). The A/V Switch chooses one of the Audio/Video input's external sources: Video Aux., S-Video, Rear Computer, or Front Computer/Video.

NOTE: CS chassis does not use AUX2 input of IC1400 so register EXT2 is always 0.

The audio source selection is made through the EXT1 register of IC1400. EXT1 selects either Composite audio or AUX1 input.



You can choose among the following inputs: Antenna/ Cable, Aux Video, S-Video, Front Computer/Video, and Rear Computer SVGA/Rear Computer NTSC. First the Audio Processor selects between COMPIN (TV) and AUX1 (A/V Switch). Then when AUX1 has been selected, the A/V switch IC2900 selects which auxiliary input goes to the audio processor. The table below shows the IC2900 A/V switch and IC1400 audio processor register values and the output source selected.

The audio source selection for the audio processor is made according the next control table:

Mode control		Audio	Source selection
EXT1	EXT2	AUX2	LSOUT
0	0	OFF	Antenna (Default)
0	1	ON	Antenna
1	0	OFF	A/V switch selection
1	1	ON	A/V switch selection

After the audio source selection is made, the sound processor block processes the signal. The output signals (LSOUT-L and LSOUT-R) are applied to both the Audio power amplifier IC804 and variable audio monitor out.

The coupling between the Audio processor and the Audio power amplifier is made through the electrolytic capacitors C808 and C805. This is done in order to block the DC level (4.0 V) of the LSOUT-L and LSOUT-R pins respectively. The coupling between the Audio processor and the variable monitor out is made through of the capacitors C1449 and C1448.

The AV switch IC2900 has 7 audio inputs and 3 audio outputs. Two of three outputs depend on video, and the others are selectable from Main (Main video) or Sub (PIP video). This chassis has no PIP.

D02 A/V switch register controls the sound selection from Main or Sub (PIP):

D02 = 0 Main sound (Default value)

D02 = 1 PIP sound

POWER SUPPLY

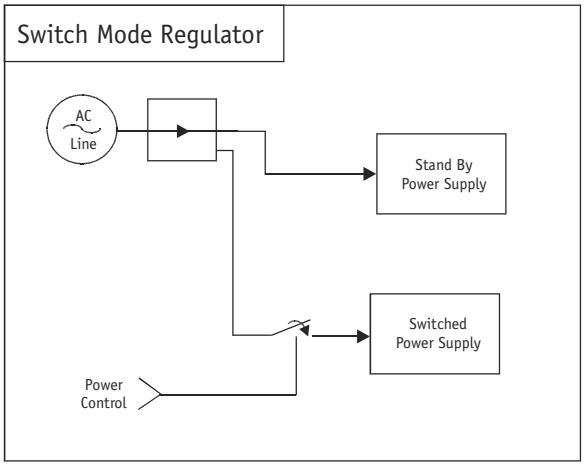
POWER SUPPLY DEFINITION

The Power Supply uses a COLD chassis and is a single sided circuit board that has been developed for screen sizes 27" through 36". The power supply features two switch mode power regulators for voltages sources. One is intended for Standby sources and the other one supplies the main switched voltages.

Both power supplies use direct regulation. One error amplifier and one optocoupler are used for each power supply. This chassis also is Energy Star compliant for low power consumption in standby mode (less than 3 Watts of consumption). This is the main reason for the standby power supply.

SWITCH MODE REGULATOR

This chassis has a switching power supply (quasi-resonant topology type). The AC line is routed through the fuse FX3400 (4A @ 250 V fast blow) and then through the bridge rectifier circuit BR3400 and CX3407. The AC operation range is between 90 Vrms to 135 Vrms. A filter consisting of LX3400 and CX3401 is employed before the rectifier circuit to reduce noise from the AC line and vice versa (EMI).



The voltage output of the rectifier (150VDC) is supplied to the Main Switch Mode Regulator Power Supply (SMPS) & Standby Switch Mode Regulation Power Supply. Its output should be operating in the range of 127.3 VDC to 190.9 VDC.

The Main SMPS consists of ICX3400, ICX3401, and ICX3402. Its chopper transformer consists of TX3400 and the standby SMPS. The standby SMPS consists of ICX3406, ICX3407, ICX3408, and the standby chopper transformer TX3401.

STAND-BY START UP

When the PIN 4 of ICX3406 terminal voltage reaches 16 VDC (typical), the control circuit enables regulator operation. Once the regulator output voltage is established, the drive winding DX3415 starts to charge CX3430 via DX3415. The voltage on CX3430 thus recovers to the nominal drive voltage.

DEFLECTION AND HIGH VOLTAGE

OVERVIEW

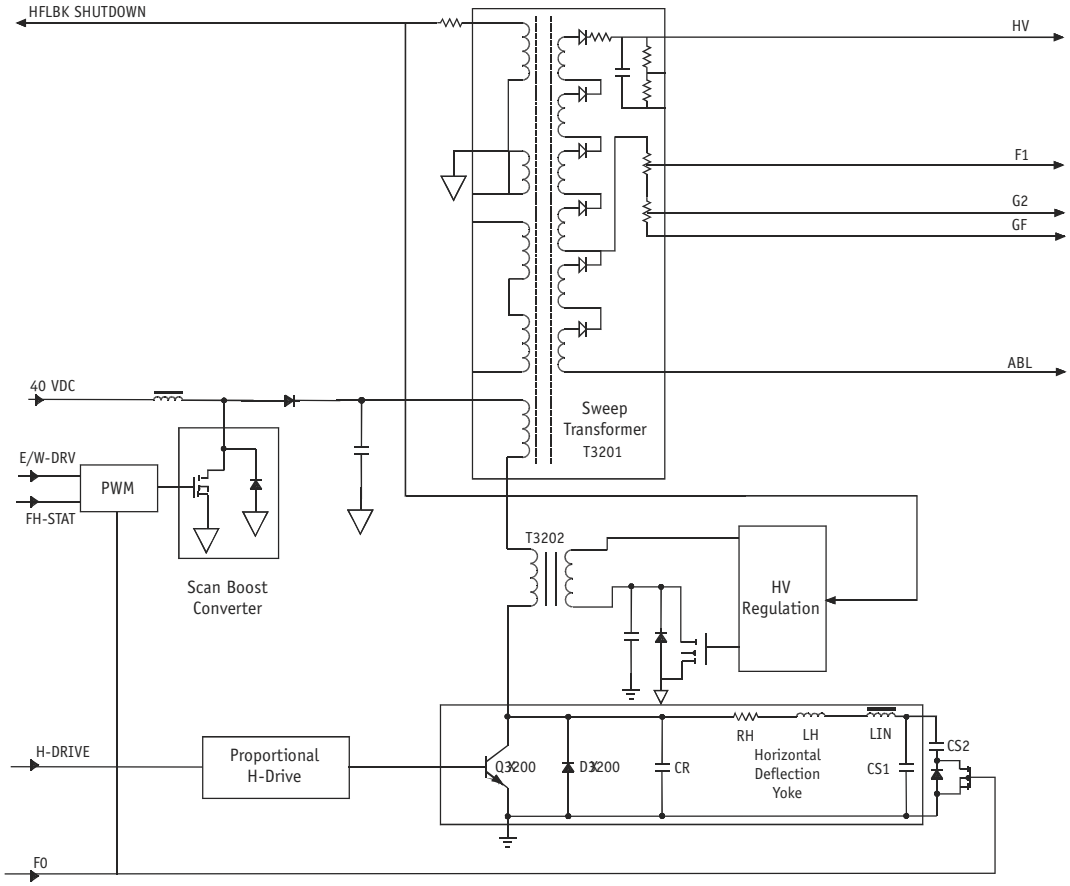
The principal function of the Deflection and HV circuits is to supply horizontal and vertical currents to the deflection yoke coils, and the high voltage generation. They are designed for use in a dual frequency television, 15.75 and 37.9 Khz. They are dependent on other circuits in the chassis to provide drive signal, DC control voltages, correction waveform, etc. This section can be divided into 7 functional blocks.

1. Horizontal Deflection and HV Generation
2. Scan Boost Converter
3. Base Drive
4. S-Capacitor Switched
5. HV Compensation
6. Shutdown Circuit
7. Vertical Deflection

HORIZONTAL DEFLECTION AND HV GENERATION

The Horizontal Deflection circuitry is a common flyback type used in many television and monitor applications. QX3200 is the Horizontal Output Transistor. When QX3200 is initially turned on, current is allowed to flow from the B+ supply, through TX2900, T3201, and QX3200. This allows energy to be stored in T3201. When QX3200 is turned off, some of this energy is returned to charge the S-capacitor(s) CX3203, CX3204, and CX3205. After several cycles (repeating at scanning frequency) sufficient voltage appears across the S-capacitor providing an additional path producing current flow though the horizontal deflection yoke coil (connector 4X4). The Damper Diode DX3200 provides the negative current path. The result is a positive and negative sawtooth current through the horizontal deflection coils (approximately 11 to 17 Amps. peak to peak).

High Voltage & Deflection



When QX3200 is turned off, about 1100 Volts peak of flyback voltage is produced from the stored energy in the horizontal deflection coils and T3201. This voltage is induced to secondary windings of T3201 to generate the high voltage from 28 to 30 KV. The flyback (or retrace) period is about 5 µs.

A secondary winding on T3201 (pin 6) provides a low voltage flyback pulse (H-FLYBK) used for synchronization of the Scan Boost Converter and like a feedback signal for the HV Compensation circuit. A capacitive divider, CX3216 and CX3217, provides a low voltage flyback pulse (H-FBP) used for synchronization, phase comparison, etc. This pulse is sent to the main chassis via pin 6 of connector 4G2.

Linearity Coil, L3200, is a saturating inductor skewed by a permanent magnet bonded to the coil. It produces a nonlinear inductance curve versus the current. This characteristic cancels non-linear ties in the deflection current caused by horizontal deflection coil resistance.

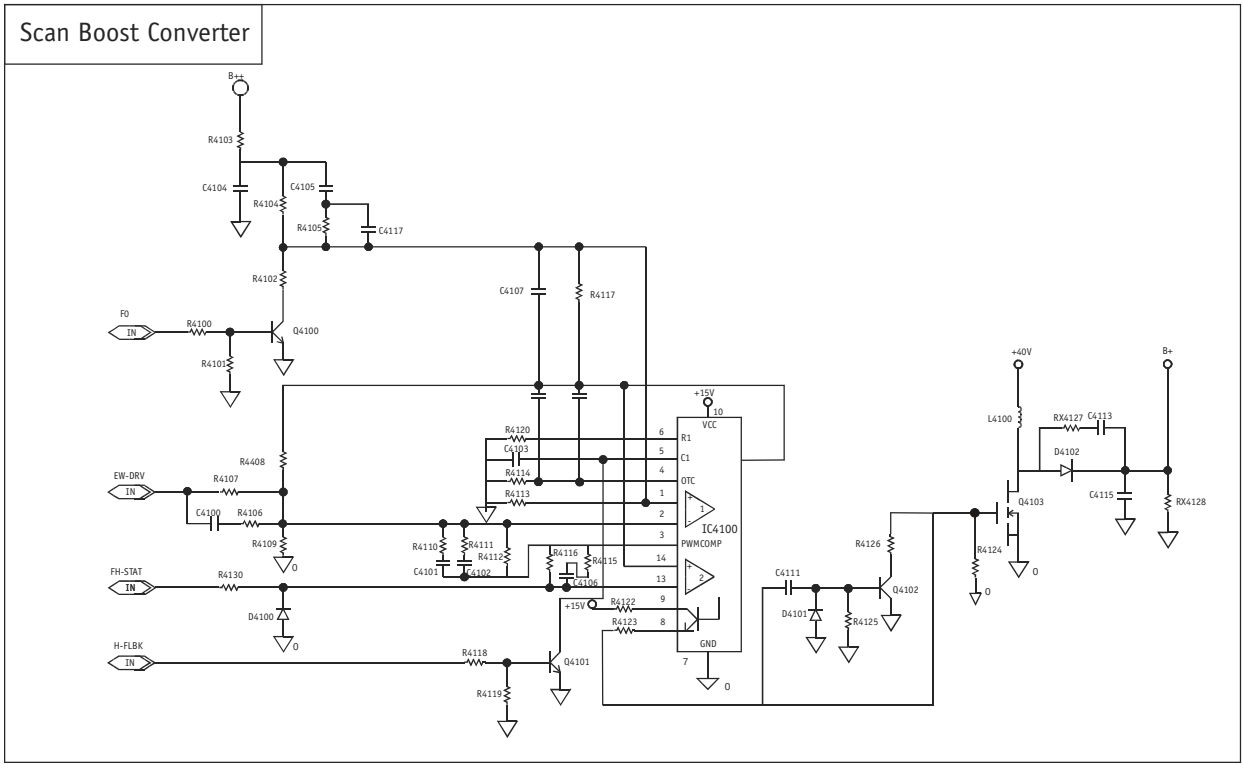
SCAN BOOST CONVERTER

Because the horizontal scan frequency is not constant, a variable voltage source is required to supply the main deflection circuit. The Scan Boost Converter circuit accomplishes this. The +40 Vdc Power Supply (from main switched mode power supply in the chassis) is boosted to the voltage required for a given operating frequency and becomes the B++ voltage to supply the main deflection circuit. The scan converter is a pseudo-synchronized, PWM, discontinuous, flyback type.

Pulse width modulation control is achieved by IC4100. It's function is to modulate the pulse width output at pin 8 based on the error voltage resulting from comparing the reference voltage at pin 2 with that at pin 1.

Scan converter free run operating frequency is controlled by R4120 and C4103. It is necessary to synchronize this frequency with the incoming Horizontal Scanning Frequency. Q4101 provides injection locking of the oscillator by discharging C4103 during the horizontal retrace interval, after which the oscillator is allowed to free run only during the remaining scanning period. The effect is a pseudo-sync-locked oscillator. This provides improved noise and response performance, while reliably operating in the discontinuous mode over the entire horizontal operating frequency range.

The output at pin 8 drives the gate of the switching transistor Q4103. The on interval determines the amount of stored energy in L4100. The longer Q4103 is on, the more energy is stored, resulting in a higher rectified output voltage at B++ after Q4103 is turned off. Q4102 provides a fast turn off of Q4103.



One of the operational amplifiers of IC4100 (pins 1,2, & 3) provides the error voltage needed to regulate the B++ output voltage to a specified level. This voltage is dependent on the horizontal scanning frequency and is determined by the Deflection Processor (ICX2600 in Main Chassis). A corresponding level 0 or 9 Vdc level (NTSC or SVGA mode) is sent to pin 7 of connector 4G2 (F0 signal). The F0 signal switch Q4100 adjusts the feedback path to have a B++ range of approximately 50 to 65 Vdc in NTSC mode and approximately 120 to 145 Vdc in SVGA mode. This depends on the EW-DRV level from the same processor (Screen Size Control).

This circuit also receives a pincushion and size correction signal. EW-DRV from the Deflection Processor (ICX2600), Pin 4 of connector 4V2, modulates B++ to provide keystone and pincushion geometric correction. EW-DRV is a vertical deflection rate parabola.

The Change Mode Protection is accomplished by the other operational amplifier in IC4100 (pins 13, 14, & 3). This protection is provided by comparing the FH-STAT signal from the Deflection Processor (ICX2600), pin 8 of connector 4G2, with a 5 Vdc level. When a change mode is performed (from NTSC to SVGA or vice versa), the FH-STAT signal goes to low level forcing the Scan Boost to work in a minimum mode (minimum B++) to minimize the change mode transients.

BASE DRIVE

The Base Drive (Proportional Drive) circuit provides high forward and reverse current to drive the base of the Horizontal Output Transistor QX3200, from a low level input (H-DRV from the Deflection Processor, ICX2600, in Main Chassis) at pin 1 of connector 4H2. This signal is approximately 9 volts peak at the operating frequency and has a duty cycle of about 40% high, 60% low.

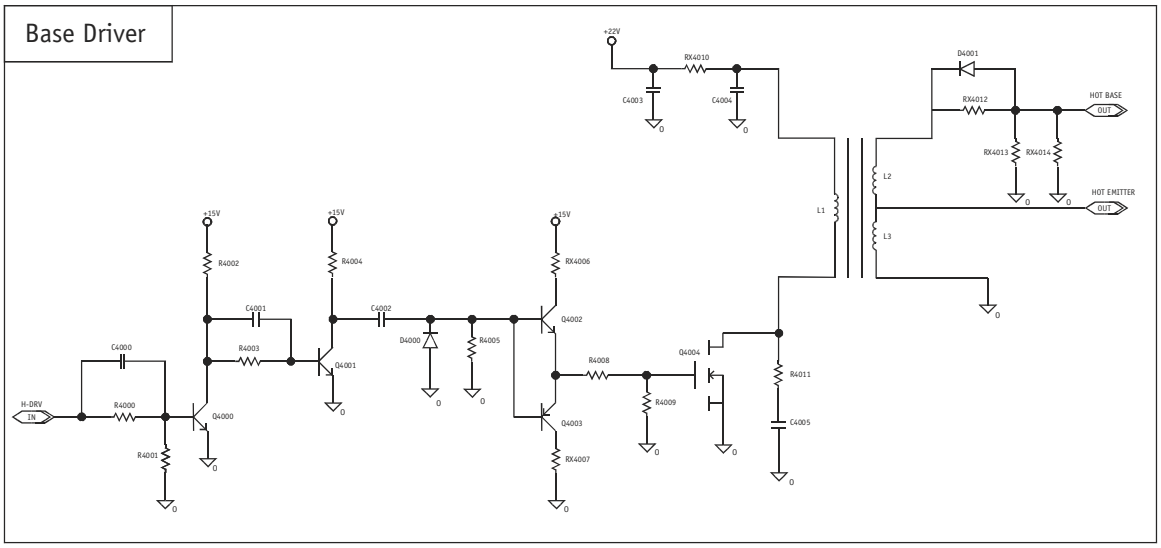
Current from H-DRV is amplified by transistor Q4002 and Q4003, providing a low impedance to rapidly drive the gate of the drive transistor, Q4004. This action results in and CX3204 are always connected in the circuit. CX3205 is switched by Q3202 via F0 signal (pin 7 of connector 4H2) from the Deflection Processor, ICX2600, in Main Chassis. This signal is buffered by Q3201. At NTSC mode all capacitors are switched in, and at SVGA mode only CX3203 and CX3204 are switched in.

S-CAPACITOR SWITCHING

The "S" shaping capacitors, CX3203, CX3204 and CX3205, provide the proper deflection current for optimum raster linearity with the two frequencies. As the horizontal scanning frequency increases, less capacity is needed. CX3203 and CX3204 are always connected in the circuit. CX3205 is switched by Q3202 via F0 signal (pin7 of connector 4H2) from the Deflection Processor, ICX2600, in Main Chassis. The signal is buffed by Q3201. At NTSC mode all capacitors are switched in, and at SVGA mode only CX3203 and CX3204 are switched in.

HV COMPENSATION

The flyback pulse voltage (H-FLYBK) from pin 6 of T3201 (Flyback Transformer) is peak detected (rectified) by the diode D2901 and capacitor C2900. This forms a DC voltage appearing on C2900 representative of the CRT anode voltage produced by T3201. This voltage is used in one of the operational amplifiers of IC3201 to provide the error voltage needed to regulate the HV to a specified level.



The error voltage is compared with a ramp signal generated in one comparator of IC2900 and synchronized by the flyback pulse (H-FLYBK) at Horizontal Scanning Frequency. It modulates the pulse width in the output to drive the gate of the switching transistor Q2904. This ramp signal is present only during the flyback pulse.

Q2904 is on during the scan time and as long as the error voltage is higher than the ramp signal. This allows energy to be stored in TX2900. When Q2904 is turned off the resonant circuit formed by C2908 and the primary inductance of TX2900 produce a flyback voltage of about 400 volts peak resulting from the store energy in TX2900. This voltage is induced to secondary windings of TX2900 to add to voltage generated in Horizontal Deflection circuit. This induce voltage is used to compensate load variation (beam current variation) in HV Flyback Transformer T3201. ABL and EW-DRV signals, weighted, can be used to ameliorate the HV controller response.

Q2905 and Q2906 are used, with F0 signal from the Deflection Processor (ICX2600 in Main Chassis), to switch +22V or +40 V to pin 4 of TX2900 to maintain the same energy stored in TX2900 for both modes (NTSC and SVGA).

Q2900 and RX2952 (potentiometer) are used to adjust the high voltage to a specified level and for coupling with HV controller (IC3201.

SHUTDOWN CIRCUIT OPERATION

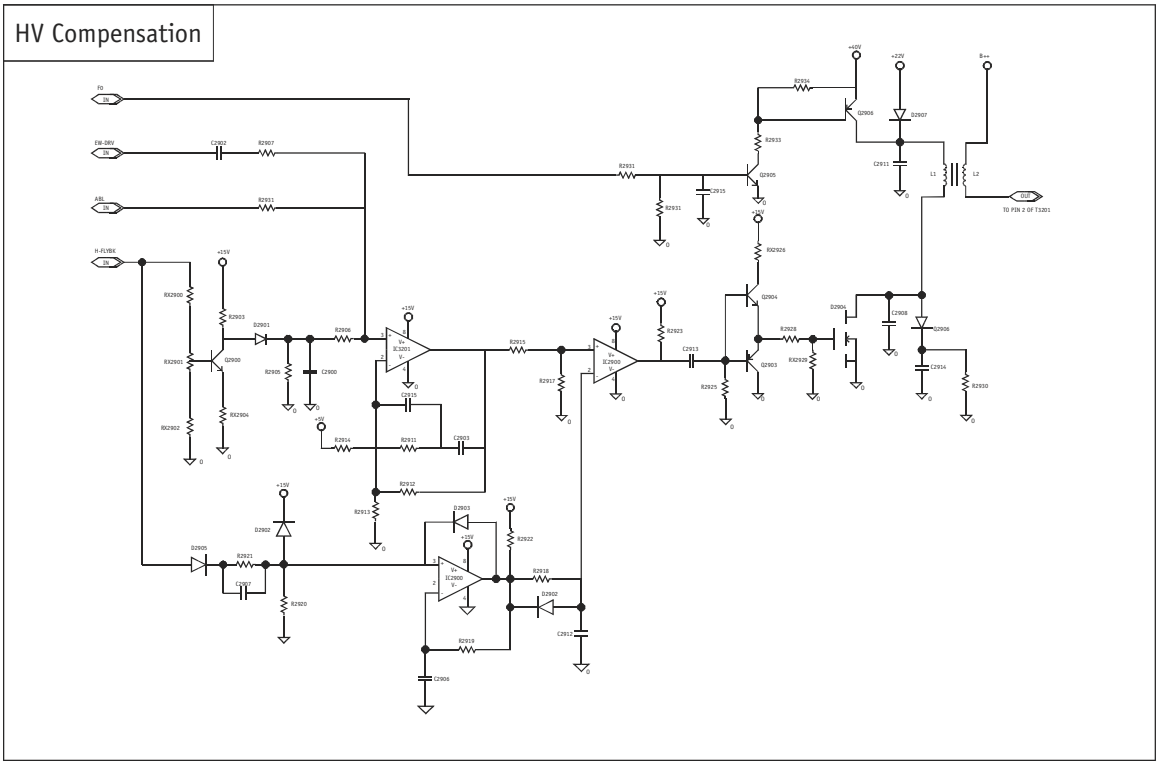
The flyback pulse voltage from pin 6 of T3201 (Flyback Transformer) is peak detected (rectified) by the action of diode D3206 and capacitor C3214. This forms a DC voltage appearing on C3214 representative of the CRT anode voltage (HV) procedure by T3201. This voltage is divided down precision resistors RX3214, RX3215, RX3216, and RX3217. This lower voltage appears on the positive input (pin3) of IC3201. In the event the CRT anode voltage become excessive, in IC3201 the positive input (pin3) will be higher that negative input (pin2) and therefore his output (pin1) will go to high level at approximately 15 volts. This signal (SD-DVR) is send to Base of Q4000 causing Horizontal Drive to be disabled and latched causing HV goes down. In about 5 seconds, the shutdown-reset circuit (Pins 8,9 & 14 of IC2900) enabled again the Horizontal Drive and HV must be reestablished.

The circuit formed by Q2907, C2913, C2916, D2908, R2923, R2935, R2936 and R2937; disable the HV compensation output (Q2902-B signal) during turn on and shutdown conditions (transients).

VERTICAL DEFLECTION

The Vertical Deflection circuit, ICX2100, is a linear amplifier that can directly drive the yoke current (including the required DC component). The sawtooth waveforms needed, as inputs, by ICX2100 are generated in the Deflection Processor, ICX2600, in Main Chassis, V-DRV+ and V-DRV, pin 1 and 2 of connector 4V2.

HV Compensation



PURITY & CONVERGENCE SETUP PROCEDURE

PRELIMINARY SETUP

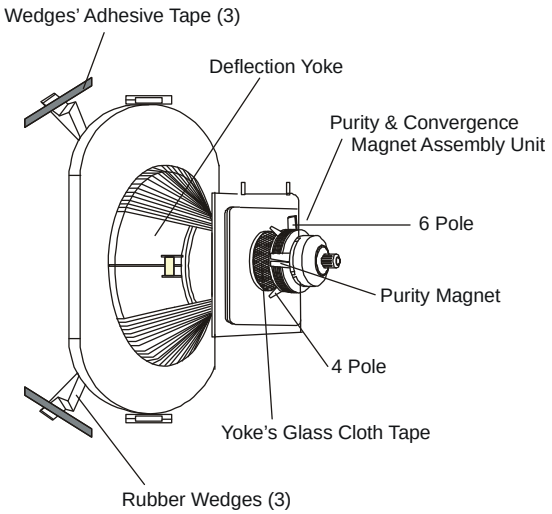
1. Allow receiver to warm up for 15 to 20 minutes.
2. Degauss receiver.
3. Connect crosshatch generator to the receiver and "rough in" the static (center) convergence.
   Follow Convergence Status.
4. Adjust for best focus.

PURITY ADJUSTMENT

1. Purity tab positioning
   Set the 2 pole purity tab together at 3 or 9 o' clock positions and the 4 and 6 pole purity tabs together at 12 or 6 o' clock positions.
2. Move yoke to maximum forward funnel position.
3. Now switch crosshatch generator to a red field.
4. Pull yoke towards rear of CRT neck centered or until red raster is displayed.
5. If red raster is not displayed as a pure red field, adjust the 2 pole purity tabs until a pure field is obtained.
6. Check for proper yoke tilt setting.

CONVERGENCE ADJUSTMENT

1. Release locking assembly
2. Connect crosshatch generator to the receiver and adjust static (center) convergence as follows:
   a. Adjust the 4 pole static control by moving the two tabs separately to converge red and blue lines horizontally. Move the two tabs together around neck of CRT in a 45° arc) from the top dead center position to converge red and blue lines vertically.
   b. After the 4 pole control has been adjusted to superimpose the red and blue lines on top of one another. Use the 6 pole static adjustment to place converged red and blue lines over the green line. Move the two tabs together around neck of CRT (in a 30° arc) from the top dead center position to move the lines vertically. Adjusting the two tabs separately will move converged beam to the left or right. Using a cross hatch generator capable or producing individual fields, adjust generator to produce a red field. Use purity tabs to center a red stripe.



CRT Ring Location Purity
Adjust Tabs Beam Movement
for Convergence

Ring Pairs	Rotation direction of Both Tabs	Movement of Red and Blue Beams
6 Pole Convergence R&B over G	Opposite	B R OR B R
	Same	B R OR B R
4 Pole Convergence R over B	Opposite	B R OR B R
	Same	B R OR B R

ADJUSTMENTS

VERTICAL-TILT WEDGE ADJUSTMENT

The vertical lines at 6 and 12 o'clock are converged by vertically tilting the yoke and inserting a wedge at the top of the yoke until it is firmly seated between the CRT glass and the horizontal coils.

HORIZONTAL-TILT WEDGE ADJUSTMENT

The vertical lines at 3 o'clock and 9 o'clock are converged by horizontally tilting the yoke and inserting a wedge.

Adjust first at 4 or 8 o'clock, whichever has the larger space, until the wedge is firmly seated between the CRT glass and yoke coils. Then, insert the 3rd wedge in the remaining horizontal tilt position until it is firmly seated between the CRT glass and yoke coils. Convergence at 3 and 9 o'clock should be maintained during this operation.

When the 3 wedges are firmly installed and positioned for acceptable convergence, lock the wedges in place by applying a 2.5 inches long strip of tape across the tabs of each wedge, firmly against the CRT glass. The CRT glass surface should be clean and free of dust and other foreign material.

UNUSUAL TILT CASE

There may be some instances where the picture tube and yoke will require vertical tilt in the opposite (up) direction to obtain convergence. In such cases, insert the vertical tilt wedge at the bottom (6 o'clock) position. Follow through on the horizontal tilt adjustment by using the 2 and 10 o'clock positions and secure each wedge with a piece of tape, as described above.

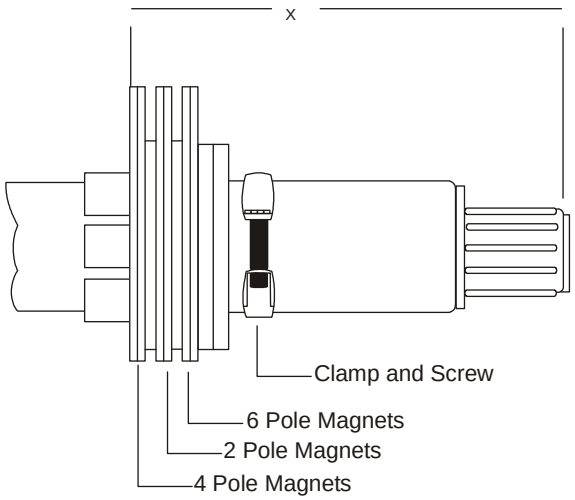
IMPROVING CRT CORNER PURITY

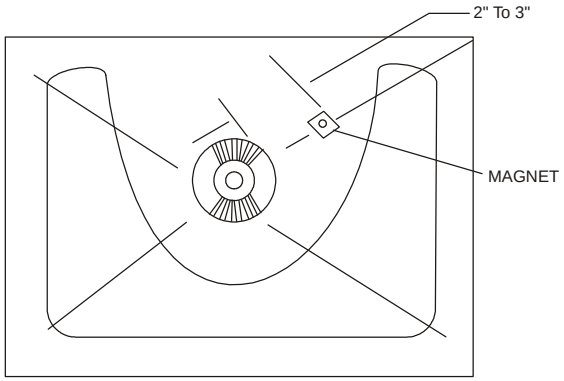
CRTs that display corner purity problems even after following the service procedures can be modified with a picture correction kit (P/N 949-50). The purity can be improved by placing a picture-correction magnet (included in the kit) on the CRT funnel. Refer to the following modification steps and illustration to place the magnet properly. Fully degauss the CRT before installing correction magnets.

MODIFICATION

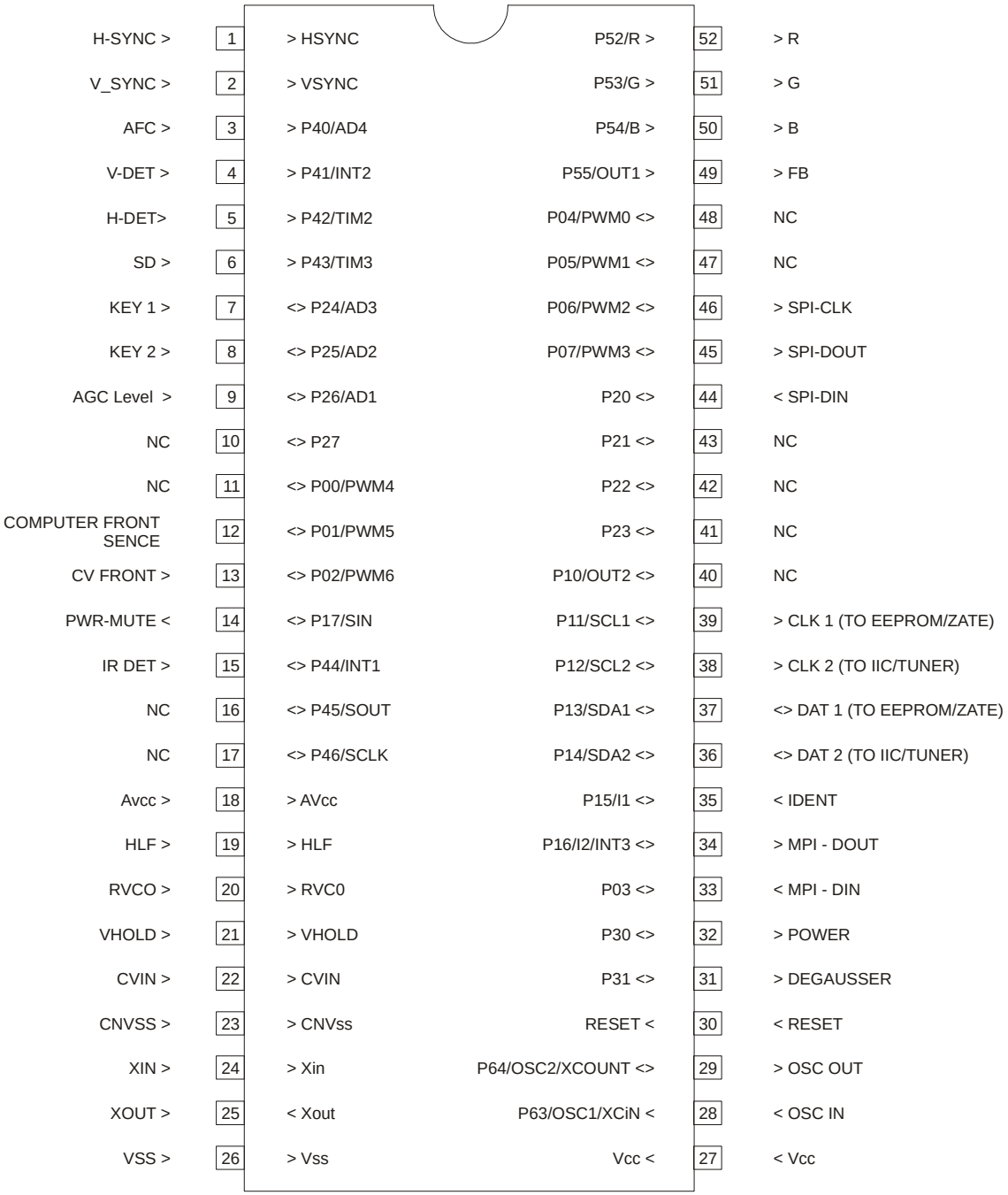
1. Place the magnet on the CRT funnel as shown in the figure displayed below, in the quadrant exhibiting impurity.
2. Rotate the magnet in place to the position shown for best purity.
3. Place a piece of 1/2" by 2" long Fiberglass tape over the magnet to hold it in place.
4. Degauss the CRT once magnet is in place to insure that the magnet is not over the internal magnet shield.

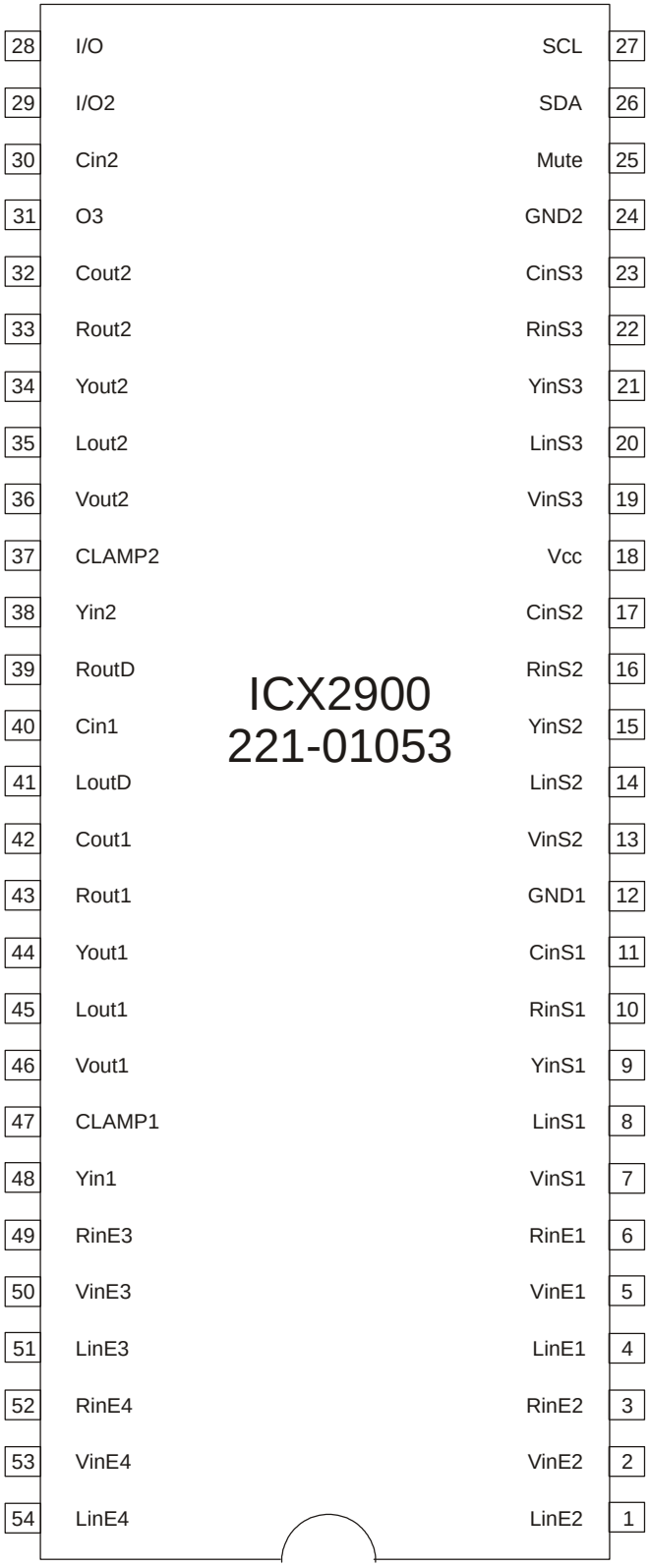
NOTE: If the magnet is placed over the internal magnet shield, any apparent purity correction will disappear after degaussing. Reposition the correction magnet off the internal shield and degauss again.





IC6000
221-01391-P07
MAIN MICRO


H-SYNC > 1 > HSYNC
V_SYNC > 2 > VSYNC
AFC > 3 > P40/AD4
V-DET > 4 > P41/INT2
H-DET> 5 > P42/TIM2
SD > 6 > P43/TIM3
KEY 1 > 7 <> P24/AD3
KEY 2 > 8 <> P25/AD2
AGC Level > 9 <> P26/AD1
NC 10 <> P27
NC 11 <> P00/PWM4
COMPUTER FRONT SENCE 12 <> P01/PWM5
CV FRONT > 13 <> P02/PWM6
PWR-MUTE < 14 <> P17/SIN
IR DET > 15 <> P44/INT1
NC 16 <> P45/SOUT
NC 17 <> P46/SCLK
Avcc > 18 > AVcc
HLF > 19 > HLF
RVCO > 20 > RVC0
VHOLD > 21 > VHOLD
CVIN > 22 > CVIN
CNVSS > 23 > CNVss
XIN > 24 > Xin
XOUT > 25 < Xout
VSS > 26 > Vss
P52/R > 52 > R
P53/G > 51 > G
P54/B > 50 > B
P55/OUT1 > 49 > FB
P04/PWM0 <> 48 NC
P05/PWM1 <> 47 NC
P06/PWM2 <> 46 > SPI-CLK
P07/PWM3 <> 45 > SPI-DOUT
P20 <> 44 < SPI-DIN
P21 <> 43 NC
P22 <> 42 NC
P23 <> 41 NC
P10/OUT2 <> 40 NC
P11/SCL1 <> 39 > CLK 1 (TO EEPROM/ZATE)
P12/SCL2 <> 38 > CLK 2 (TO IIC/TUNER)
P13/SDA1 <> 37 <> DAT 1 (TO EEPROM/ZATE)
P14/SDA2 <> 36 <> DAT 2 (TO IIC/TUNER)
P15/I1 <> 35 < IDENT
P16/I2/INT3 <> 34 > MPI - DOUT
P03 <> 33 < MPI - DIN
P30 <> 32 > POWER
P31 <> 31 > DEGAUSSER
RESET < 30 < RESET
P64/OSC2/XCOUNT <> 29 > OSC OUT
P63/OSC1/XCiN < 28 < OSC IN
Vcc < 27 < Vcc


ICX2900
221-01053
28 I/O
29 I/O2
30 Cin2
31 O3
32 Cout2
33 Rout2
34 Yout2
35 Lout2
36 Vout2
37 CLAMP2
38 Yin2
39 RoutD
40 Cin1
41 LoutD
42 Cout1
43 Rout1
44 Yout1
45 Lout1
46 Vout1
47 CLAMP1
48 Yin1
49 RinE3
50 VinE3
51 LinE3
52 RinE4
53 VinE4
54 LinE4
27 SCL
26 SDA
25 Mute
24 GND2
23 CinS3
22 RinS3
21 YinS3
20 LinS3
19 VinS3
18 Vcc
17 CinS2
16 RinS2
15 YinS2
14 LinS2
13 VinS2
12 GND1
11 CinS1
10 RinS1
9 YinS1
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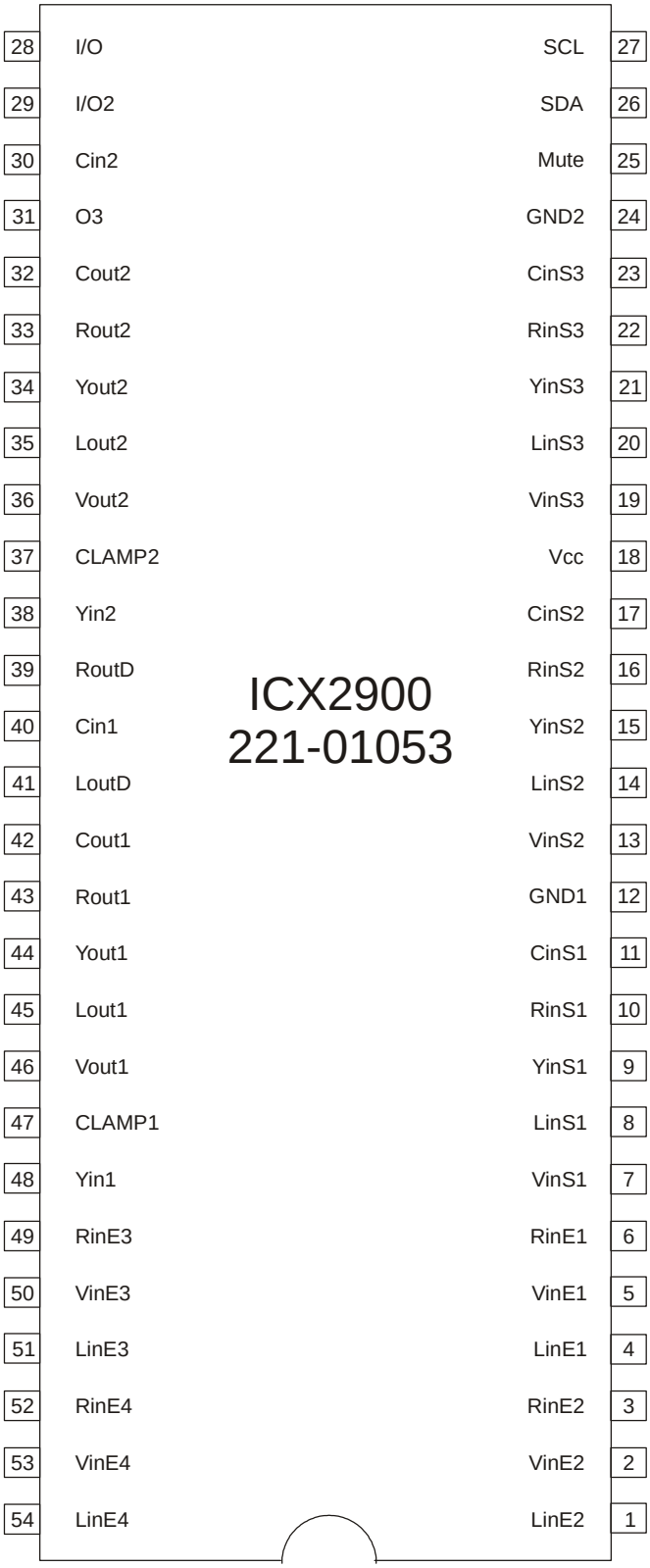
7 VinS1
6 RinE1
5 VinE1
4 LinE1
3 RinE2
2 VinE2
1 LinE2


ICX2900
221-01053
28 I/O
29 I/O2
30 Cin2
31 O3
32 Cout2
33 Rout2
34 Yout2
35 Lout2
36 Vout2
37 CLAMP2
38 Yin2
39 RoutD
40 Cin1
41 LoutD
42 Cout1
43 Rout1
44 Yout1
45 Lout1
46 Vout1
47 CLAMP1
48 Yin1
49 RinE3
50 VinE3
51 LinE3
52 RinE4
53 VinE4
54 LinE4
27 SCL
26 SDA
25 Mute
24 GND2
23 CinS3
22 RinS3
21 YinS3
20 LinS3
19 VinS3
18 Vcc
17 CinS2
16 RinS2
15 YinS2
14 LinS2
13 VinS2
12 GND1
11 CinS1
10 RinS1
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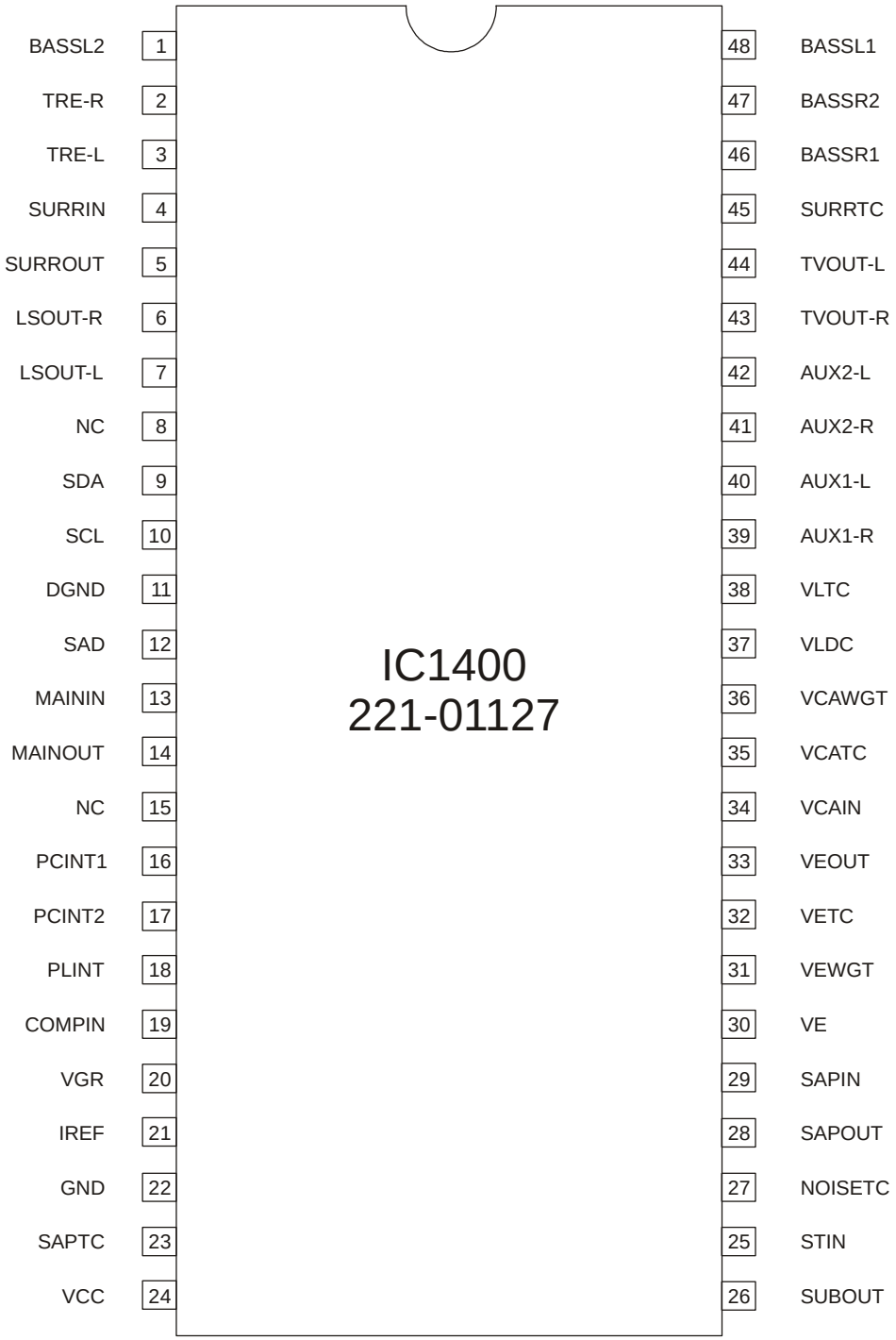
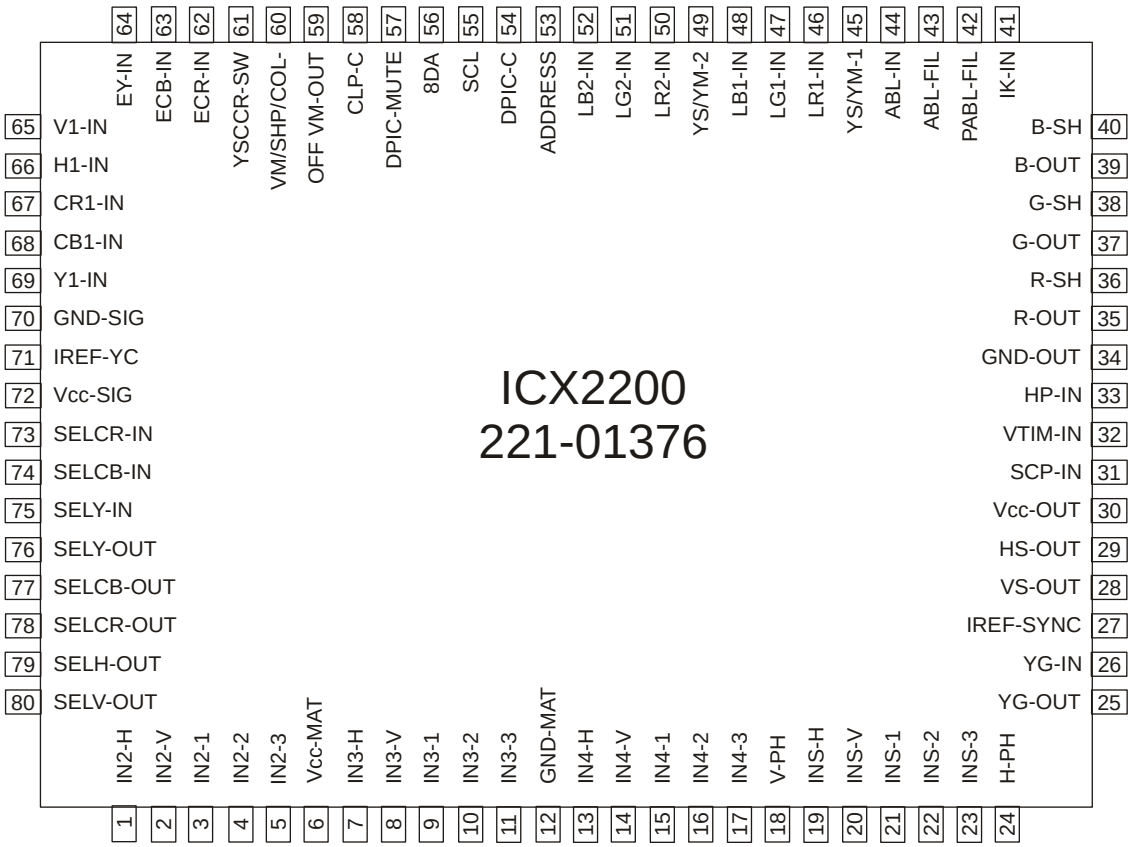
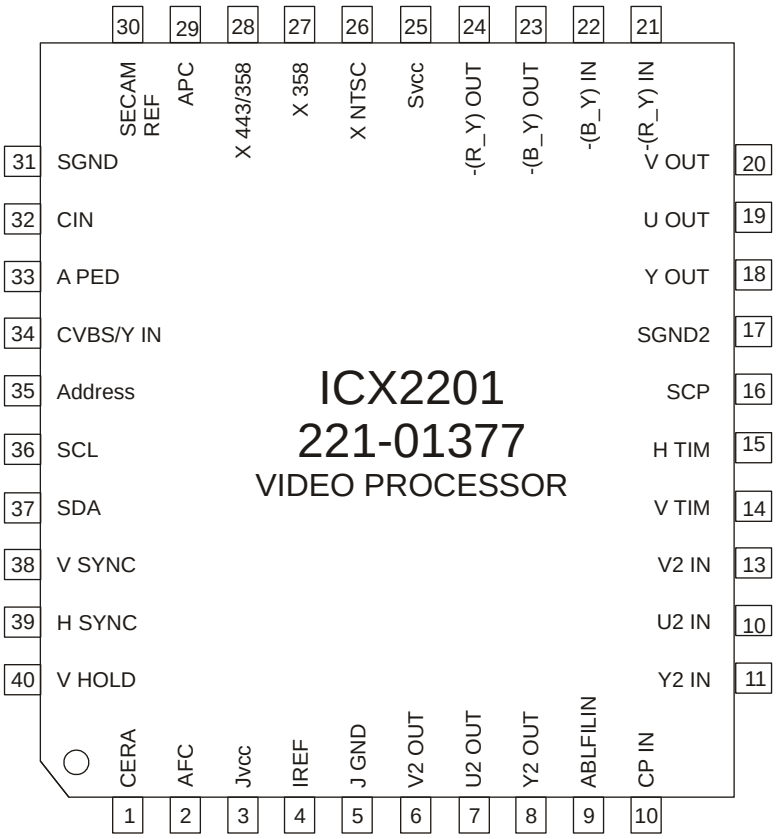
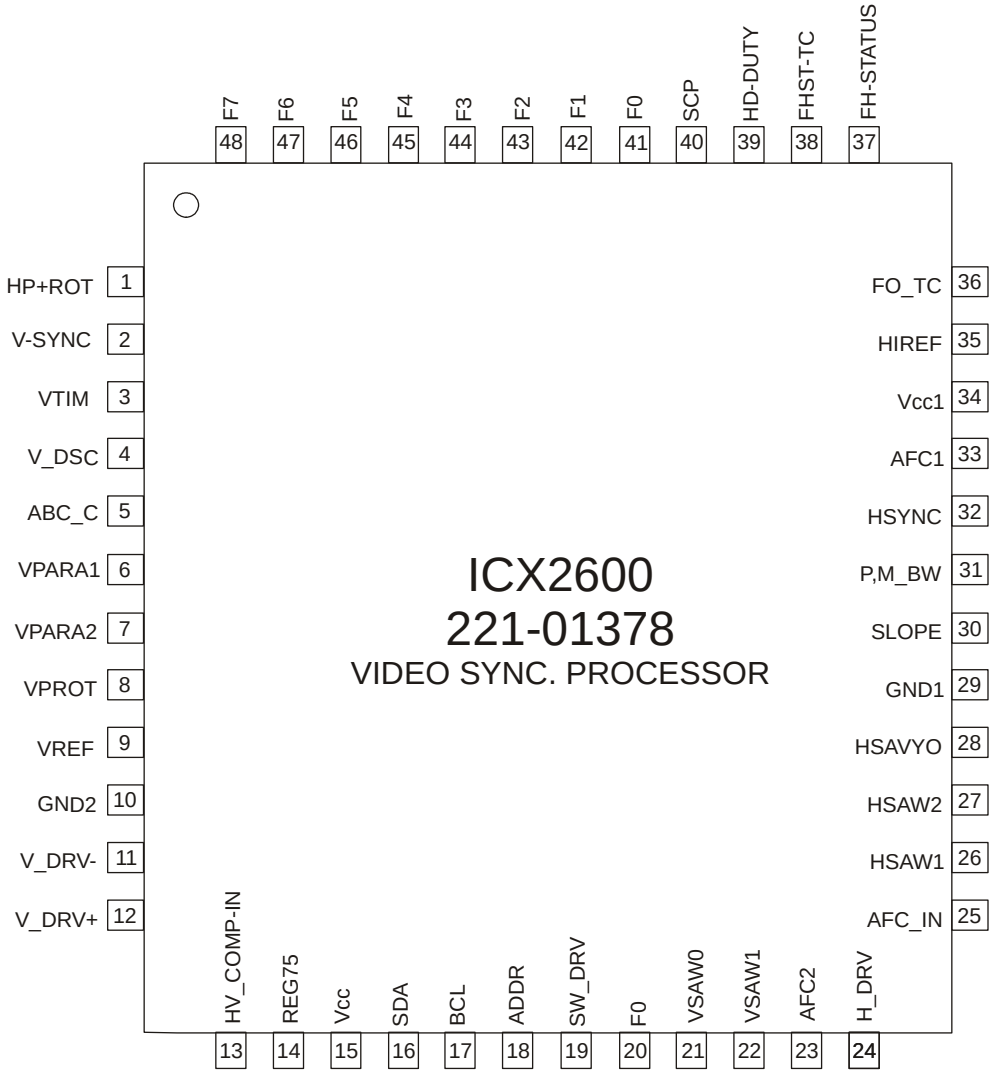
4 LinE1
3 RinE2
2 VinE2
1 LinE2


IC1400
221-01127
BASSL2 1
TRE-R 2
TRE-L 3
SURRIN 4
SURROUT 5
LSOUT-R 6
LSOUT-L 7
NC 8
SDA 9
SCL 10
DGND 11
SAD 12
MAININ 13
MAINOUT 14
NC 15
PCINT1 16
PCINT2 17
PLINT 18
COMPIN 19
VGR 20
IREF 21
GND 22
SAPTC 23
VCC 24
48 BASSL1
47 BASSR2
46 BASSR1
45 SURRTC
44 TVOUT-L
43 TVOUT-R
42 AUX2-L
41 AUX2-R
40 AUX1-L
39 AUX1-R
38 VLTC
37 VLDC
36 VCAWGT
35 VCATC
34 VCAIN
33 VEOUT
32 VETC
31 VEWGT
30 VE
29 SAPIN
28 SAPOUT
27 NOISETC
25 STIN
26 SUBOUT


ICX2200
221-01376
1 IN2-H
2 IN2-V
3 IN2-1
4 IN2-2
5 IN2-3
6 Vcc-MAT
7 IN3-H
8 IN3-V
9 IN3-1
10 IN3-2
11 IN3-3
12 GND-MAT
13 IN4-H
14 IN4-V
15 IN4-1
16 IN4-2
17 IN4-3
18 V-PH
19 INS-H
20 INS-V
21 INS-1
22 INS-2
23 INS-3
24 H-PH
25 YG-OUT
26 YG-IN
27 IREF-SYNC
28 VS-OUT
29 HS-OUT
30 Vcc-OUT
31 SCP-IN
32 VTIM-IN
33 HP-IN
34 GND-OUT
35 R-OUT
36 R-SH
37 G-OUT
38 G-SH
39 B-OUT
40 B-SH
41 IK-IN
42 PABL-FIL
43 ABL-FIL
44 ABL-IN
45 YS/YM-1
46 LR1-IN
47 LG1-IN
48 LB1-IN
49 YS/YM-2
50 LR2-IN
51 LG2-IN
52 LB2-IN
53 ADDRESS
54 DPIC-C
55 SCL
56 8DA
57 DPIC-MUTE
58 CLP-C
59 OFF VM-OUT
60 VM/SHP/COL-
61 YSCCR-SW
62 ECR-IN
63 ECB-IN
64 EY-IN
65 V1-IN
66 H1-IN
67 CR1-IN
68 CB1-IN
69 Y1-IN
70 GND-SIG
71 IREF-YC
72 Vcc-SIG
73 SELCR-IN
74 SELCB-IN
75 SELY-IN
76 SELY-OUT
77 SELCB-OUT
78 SELCR-OUT
79 SELH-OUT
80 SELV-OUT


ICX2201
221-01377
VIDEO PROCESSOR
30 SECAM REF
29 APC
28 X 443/358
27 X 358
26 X NTSC
25 Svcc
24 -(R_Y) OUT
23 -(B_Y) OUT
22 -(B_Y) IN
21 -(R_Y) IN
31 SGND
32 CIN
33 A PED
34 CVBS/Y IN
35 Address
36 SCL
37 SDA
38 V SYNC
39 H SYNC
40 V HOLD
20 V OUT
19 U OUT
18 Y OUT
17 SGND2
16 SCP
15 H TIM
14 V TIM
13 V2 IN
10 U2 IN
11 Y2 IN
1 CERA
2 AFC
3 Jvcc
4 IREF
5 J GND
6 V2 OUT
7 U2 OUT
8 Y2 OUT
9 ABLFILIN
10 CP IN


ICX2600
221-01378
VIDEO SYNC. PROCESSOR
HP+ROT 1
V-SYNC 2
VTIM 3
V_DSC 4
ABC_C 5
VPARA1 6
VPARA2 7
VPROT 8
VREF 9
GND2 10
V_DRV- 11
V_DRV+ 12
HV_COMP-IN 13
REG75 14
Vcc 15
SDA 16
BCL 17
ADDR 18
SW_DRV 19
F0 20
VSAW0 21
VSAW1 22
AFC2 23
H_DRV 24
AFC_IN 25
HSAW1 26
HSAW2 27
HSAVYO 28
GND1 29
SLOPE 30
P,M_BW 31
HSYNC 32
AFC1 33
Vcc1 34
HIREF 35
FO_TC 36
FH-STATUS 37
FHST-TC 38
HD-DUTY 39
SCP 40
F0 41
F1 42
F2 43
F3 44
F4 45
F5 46
F6 47
F7 48

MODEL PARTS

All CS models are module level repair only. Parts contact information is below.

Voice: 1-888-3-ZENITH
Fax: 1-888-6-ZENITH
Mail: ZENITH NATIONAL PARTS
P O Box 240007
Huntsville, AL 35824-6407

MODEL PARTS

H27E46DT

Item	Description
009-02097	Module, Video Output
014-12254-P12	Cabinet Rear
014-12336-P05	Cabinet Front
020-04330-P62	Coil, Degausser
030-01532-01	Decorative Item, Logo, Zenith
050-02361-01	Connector and Cable Assembly, 35V CTV Yoke
124-00233-04	Space Command Transmitter, MBR3447C
192-00916	Lens, IR
206-03755	Instr Book, Operation & Installation
A-18299-04	Line Cord and Terminals Assembly,
A-18378-01	CRT Assembly w/Deflection Yoke and Bender
A-18695-P24	Gnd Strap Ass'y, CRT
A-18793	Accessory Kit, Cables and Software, Video Mirror/Audio
A-19129	PC Board Ass'y, VGA Card
F-53646	Keyboard Ass'y, 10 Key with Tall IR
P009-02197	Module, Large Signal
P009-02295-01	Module, Small Signal
P049-01368-08	Speaker, Oval, 6 X 13 cm
P050-02864-07	Connector & Cable Assembly, Speaker Interconnect
PF-54515	Front Jack Ass'y with Cables

H27E46DT8

Item	Description
009-02097	Module, Video Output
014-12254-P12	Cabinet Rear
014-12336-P05	Cabinet Front
020-04330-P62	Coil, Degausser
030-01532-01	Decorative Item, Logo, Zenith
050-02361-01	Connector and Cable Assembly, 35V CTV Yoke
124-00233-04	Space Command Transmitter, MBR3447C
192-00916	Lens, IR
206-03755	Instr Book, Operation & Installation
A-18299-04	Line Cord and Terminals Assembly
A-18378-P03	CRT Assembly w/Deflection Yoke (2H) A, 27V 1.4R (Foshan)
A-18695-P24	Gnd Strap Ass'y, CRT
A-18793	Accessory Kit, Cables and Software, Video Mirror/Audio
A-19129	PC Board Ass'y, VGA Card
F-53646	Keyboard Ass'y, 10 Key with Tall IR
P009-02197	Module, Large Signal
P009-02295-01	Module, Small Signal
P049-01368-08	Speaker, Oval, 6 X 13 cm
P050-02864-07	Connector & Cable, Assembly, Speaker Interconnect
P149-00706	Magnet, Purity Correction, 'Chevron Magnet'
PA-19410	Convergence Helper
PF-54515	Front Jack Ass'y with Cables

H32E46DT

Item	Description
009-02097-01	Module, Video Output
014-12284-P33	Cabinet Front
014-12285-P10	Cabinet Rear
020-04330-33	Coil, Degausser
030-01532-01	Decorative Item, Logo, Zenith
124-00233-04	Space Command Transmitter, MBR3447C
152-00335-01	Wedge, CRT Spacer
192-00916	Lens, IR
206-03755	Instr Book, Operation & Installation
A-18299-04	Line Cord
A-18695-03	Gnd Strap Ass'y, CRT
A-18793	Accessory Kit, Cables and Software, Video Mirror/Audio
A-19111	CRT Assembly w/Deflection Yoke and Bender
A-19129	PC Board Ass'y, VGA Card
F-53707	Keyboard Ass'y, 10 Key, with Short IR
P009-02198	Module, Large Signal
P009-02295-02	Module, Small Signal
P049-01368-08	Speaker, Oval, 6 X 13 cm
P050-02864-06	Connector & Cable, Assembly, Speaker Interconnect
PA-19298-02	PC Board Ass'y, Daughter
PA-19410	Convergence Helper
PF-54515	Front Jack Ass'y with Cables

H36E46DT

Item	Description
009-02098	Module, Video Output
014-12269-P18	Cabinet Front
014-12270-P16	Cabinet Rear
020-04330-34	Coil, Degausser
030-01532-01	Decorative Item, Logo, Zenith
050-02361-03	Connector and Cable Assembly, 35V CTV Yoke
124-00233-04	Space Command Transmitter, MBR3447C
192-00916	Lens, IR
206-03755	Instr Book, Operation & Installation
A-18299-04	Line Cord
A-18695-04	Gnd Strap Ass'y, CRT
A-18793	Accessory Kit, Cables and Software, Video Mirror/Audio
A-19110	CRT Assembly w/Deflection Yoke and Bender
A-19129	PC Board Ass'y, VGA Card
F-53707	Keyboard Ass'y, 10 Key, with Short IR
P009-02199	Module, Large Signal
P009-02295-03	Module, Small Signal
P049-01368-08	Speaker, Oval, 6 X 13 cm
P050-02864-06	Connector & Cable, Assembly, Speaker Interconnect
PA-19298-03	PC Board Ass'y, Daughter
PA-19410	Convergence Helper
PF-54515	Front Jack Ass'y with Cables

COMPONENT PARTS LIST

A = H27E46DT C = H32E46DT
B = H27E46DT8 D = H36E46DT

NOTE: This list will enable you to easily determine the parts used on each Model, Chassis, or Assembly.

RC	REF	PART#	DESCRIPTION
Model	SRD's	Item	Description
ABCD	10VGA1	P050-02865-06	CONNECTOR/CABLE ASSY,, TWISTED;
ABCD	1A5	050-02823-P11	CONNECTOR/CABLE ASSY CABLE ASSY
ABCD	1E11	P078-03571	CONNECTOR; 11 POSITION, 2.5MM; VERY LOW INSERTION
ABCD	1F6	050-02858	CONNECTOR/CABLE ASSY,, SHIELDED; 8 CIRCUIT
ABCD	2C4	050-02840-06	CONNECTOR/CABLE ASSY, 2.5MM, 3 CONTACT
ABCD	2E6	P078-03571	CONNECTOR; 11 POSITION, 2.5MM; VERY LOW INSERTION
ABCD	2G4	P050-02865-07	CONNECTOR/CABLE ASSY,, TWISTED;
ABCD	2H4	050-02852	CONNECTOR/CABLE ASSY,, SHIELDED; 2 CIRCUIT
ABCD	2V4	050-02855-03	CONNECTOR/CABLE ASSY,, SHIELDED; 5 CIRCUIT
ABCD	4B2/2B4	050-02842-P02A	CONNECTOR/CABLE ASSY, 2.5MM, 5 CONTACT WITH DRESSING
CD	4D3	050-02839-P07A	CONNECTOR/CABLE ASSY, 2.5MM, 2 CONTACT WITH DRESSING
CD	4F3	P050-02866	CONNECTOR/CABLE ASSY
AB	4F3	P050-02866-01	CONNECTOR/CABLE ASSY
ABCD	4P2/2P4	050-02839-P06A	CONNECTOR/CABLE ASSY, 2.5MM, 2 CONTACT WITH DRESSING
ABCD	4Z2	P050-02870-29	CONNECTOR/CABLE ASSY WITH GROUND TERMINAL
ABCD	8A4	050-02854	CONNECTOR/CABLE ASSY,, SHIELDED; 4 CIRCUIT
ABCD	8B4	050-02856-02	CONNECTOR/CABLE ASSY,, SHIELDED; 6 CIRCUIT
ABCD	8VGA2	050-02860-03	CONNECTOR/CABLE ASSY,, SHIELDED; 10 CIRCUIT
ABCD	BR3400	212-00168-04	RECTIFIER NTWK; BRIDGE; 600V/6A
CD	BR3400	P126-03764	HEAT SINK; IC, HORIZONTAL

RC	REF	PART#	DESCRIPTION
			DEFLECTIO;
ABCD	C0804M0	022-08366-12A	CAP; 2,200 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C0805	022-08312-07A	CAP; 4.7 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C0806	022-08309-12A	CAP; 100 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	C0807	022-08309-12A	CAP; 100 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	C0808	022-08312-07A	CAP; 4.7 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C0812M0	022-08366-12A	CAP; 2,200 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C1200M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C1201	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C1202M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C1203M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C1204M0	022-08376-32A	CAP; 100,000 PFD +80% & -20%; CERAMIC CHIP, LDLESS
ABCD	C1205M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C1206M	022-08366-08A	CAP; 1,000 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C1207M0	022-08352-19A	CAP; 20 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C1208M	022-08366-08A	CAP; 1,000 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C1209	022-08312-08A	CAP; 10 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C1210M	022-08366-08A	CAP; 1,000 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C1212M	022-08352-23A	CAP; 30 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C1214M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C1215	022-08227-09A	CAP; 0.068 MFD 5% 50V; POLYESTER

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COMPONENT PARTS LIST

A = H27E46DT C = H32E46DT
B = H27E46DT8 D = H36E46DT

NOTE: This list will enable you to easily determine the parts used on each Model, Chassis, or Assembly.

RC	REF	PART#	DESCRIPTION
ABCD	C1216M	022-08366-28	CAP; 47,000 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C1217M0	022-08352-22A	CAP; 27 PFD 5% 50V; DDFF
ABCD	C1218M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C1219	022-08312-07A	CAP; 4.7 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C1220M0	022-08352-14A	CAP; 12 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C1221M0	022-08352-14A	CAP; 12 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C1222M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C1223M0	022-08352-14A	CAP; 12 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C1224M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C1225	022-08309-12A	CAP; 100 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	C1226M	022-08366-16A	CAP; 4,700 PFD 10% 50V; FF
ABCD	C1227	022-08312-08A	CAP; 10 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C1228	022-08309-12A	CAP; 100 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	C1230	022-08312-07A	CAP; 4.7 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C1231M	022-08366-08A	CAP; 1,000 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C1232M	022-08366-04A	CAP; 470 PFD 10% 50V; DDFF
ABCD	C1233M0	022-08366-12A	CAP; 2,200 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C1234M0	022-08366-12A	CAP; 2,200 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C1239	022-08492-01A	CAP; 1 MFD 20% 50V; NONPLZD ELECTROLYTIC
ABCD	C1240	022-08312-11A	CAP; 47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C1241	022-07914-02A	CAP; .47 MFD 20% 50V; CERAMIC CHIP
ABCD	C1242	022-08309-12A	CAP; 100 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	C1244	022-07914-02A	CAP; .47 MFD 20% 50V; CERAMIC CHIP
ABCD	C1401M0	022-08370-22A	CAP; 15,000 PFD 10% 16V; CERAMIC CHIP, LDLESS
ABCD	C1402M0	022-08366-18A	CAP; 6,800 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C1403M0	022-08370-22A	CAP; 15,000 PFD 10% 16V; CERAMIC CHIP, LDLESS
ABCD	C1404M0	022-08366-18A	CAP; 6,800 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C1406M0	022-08370-24A	CAP; 22,000 PFD 10% 16V; CERAMIC CHIP, LDLESS
ABCD	C1408	022-08188-05A	CAP; 10 MFD 20% 25V; NONPLZD ELECTROLYTIC
ABCD	C1410	022-08188-05A	CAP; 10 MFD 20% 25V; NONPLZD ELECTROLYTIC
ABCD	C1413	022-08312-08A	CAP; 10 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C1414	022-07669-15A	CAP; 10 MFD 10% 50V; ELECTROLYTIC, 1 SECT
ABCD	C1415	022-08312-04A	CAP; 1 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C1416	022-08188-05A	CAP; 10 MFD 20% 25V; NONPLZD ELECTROLYTIC
ABCD	C1417	022-08188-05A	CAP; 10 MFD 20% 25V; NONPLZD ELECTROLYTIC
ABCD	C1418	022-08312-04A	CAP; 1 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C1419	022-07669-14A	CAP; 3.3 MFD 10% 50V; ELECTROLYTIC, 1 SECT
ABCD	C1420	022-08049-13A	CAP; 0.012 MFD 10% 50V; POLYESTER
ABCD	C1421	022-08257-21A	CAP; 5600 PFD 10% 50V; CERAMIC DISC
ABCD	C1422	022-08049-20A	CAP; 0.047 MFD 10% 50V; POLYESTER
ABCD	C1424	022-08257-17A	CAP; 2700 PFD 10% 50V; CERAMIC DISC
ABCD	C1425	022-08312-07A	CAP; 4.7 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C1426	022-08188-05A	CAP; 10 MFD 20% 25V;

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NOTE: This list will enable you to easily determine the parts used on each Model, Chassis, or Assembly.

RC	REF	PART#	DESCRIPTION
			NONPLZD ELECTROLYTIC
ABCD	C1427	022-08188-05A	CAP; 10 MFD 20% 25V; NONPLZD ELECTROLYTIC
ABCD	C1428	022-08312-07A	CAP; 4.7 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C1430	022-08309-12A	CAP; 100 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	C1431M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C1432	022-08312-07A	CAP; 4.7 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C1433M0	022-08376-32A	CAP; 100,000 PFD +80% & -20%; CERAMIC CHIP, LDLESS
ABCD	C1436	022-08312-07A	CAP; 4.7 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C1440M	022-08366-16A	CAP; 4,700 PFD 10% 50V; FF
ABCD	C1442	022-08312-07A	CAP; 4.7 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C1443	022-08312-05A	CAP; 2.2 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C1444M	022-08366-16A	CAP; 4,700 PFD 10% 50V; FF
ABCD	C1445	022-08312-07A	CAP; 4.7 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C1446	022-08312-05A	CAP; 2.2 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C1447	022-08309-14A	CAP; 330 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	C1448	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C1449	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C1450	022-08310-17	CAP; 2200 MFD 20% 25V; ELECTROLYTIC, 1 SECT
ABCD	C2	022-08368-32	CAP; 100,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2106	022-08067-02A	CAP; 0.47 MFD 10% 100V; CERAMIC CHIP
ABCD	C2112	022-08247-05A	CAP; 5 PFD +&- 0.25 PFD 50V; CERAMIC DISC
ABCD	C2200	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2201	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2202M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2203	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2204	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2205	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2206	022-08312-08A	CAP; 10 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2207M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2208	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2209	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2210	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2211	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2212	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2213	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2214	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2215	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2216	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2217	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2218	022-08312-04A	CAP; 1 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2223M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2224M0	022-08368-32	CAP; 100,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2225	022-08309-11A	CAP; 47 MFD 20% 16V;

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COMPONENT PARTS LIST

A = H27E46DT C = H32E46DT
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RC	REF	PART#	DESCRIPTION
			ELECTROLYTIC, 1 SECT
ABCD	C2226M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2227M0	022-08368-32	CAP; 100,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2228M0	022-08368-32	CAP; 100,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2229M0	022-08368-32	CAP; 100,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2230M	022-08366-08A	CAP; 1,000 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C2232M0	022-08366-12A	CAP; 2,200 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C2233	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2234	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2235	022-08312-08A	CAP; 10 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2236	022-08048A	CAP; 0.0010 MFD 5% 50V; POLYESTER
ABCD	C2240M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2241M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2242M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2243	022-08312-08A	CAP; 10 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2244	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2250	022-08309-11A	CAP; 47 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	C2251M0	022-08376-32A	CAP; 100,000 PFD +80% & -20%; CERAMIC CHIP, LDLESS
ABCD	C2252	022-08309-11A	CAP; 47 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	C2253M0	022-08368-32	CAP; 100,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2254M0	022-08368-32	CAP; 100,000 PFD 10% 25V; CERAMIC CHIP, LDLESS

RC	REF	PART#	DESCRIPTION
ABCD	C2260M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2261M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2265	022-08312-04A	CAP; 1 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2266M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2267	022-08309-11A	CAP; 47 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	C2268M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2270M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2271	022-08309-11A	CAP; 47 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	C2272M0	022-08352-16A	CAP; 15 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C2275M	022-08366-04A	CAP; 470 PFD 10% 50V; DDFF
ABCD	C2276	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2277M	022-08366-04A	CAP; 470 PFD 10% 50V; DDFF
ABCD	C2278	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2279	022-08190-01A	CAP; 1 MFD 20% 50V; NONPLZD ELECTROLYTIC
ABCD	C2280M0	022-08352-36A	CAP; 100 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C2281M	022-08366-16A	CAP; 4,700 PFD 10% 50V; FF
ABCD	C2282	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2290	022-08312-03A	CAP; 0.47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2401	022-08312-08A	CAP; 10 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2402	022-08309-11A	CAP; 47 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	C2403M0	022-08352-44A	CAP; 220 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C2404M0	022-08352-44A	CAP; 220 PFD 5% 50V; CERAMIC CHIP, LDLESS

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RC	REF	PART#	DESCRIPTION
ABCD	C2405M0	022-08352-31A	CAP; 62 PFD 5% 50V; DD
ABCD	C2406M	022-08366-08A	CAP; 1,000 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C2407	022-08312-08A	CAP; 10 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2408M	022-08366-08A	CAP; 1,000 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C2409M0	022-08352-31A	CAP; 62 PFD 5% 50V; DD
ABCD	C2410M0	022-08352-44A	CAP; 220 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C2600	022-08312-04A	CAP; 1 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2601	022-08003-02A	CAP; .1 MFD 5% 50V; CERAMIC CHIP
ABCD	C2602	022-08003-02A	CAP; .1 MFD 5% 50V; CERAMIC CHIP
ABCD	C2603	022-08312-07A	CAP; 4.7 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2604	022-08312-07A	CAP; 4.7 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2605	022-08312-11A	CAP; 47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2607M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2608	022-07774-24	CAP; 0.1 MFD 10% 100V; POLYESTER
ABCD	C2612M0	022-08366-13A	CAP; 2,700 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C2613	022-07774-24	CAP; 0.1 MFD 10% 100V; POLYESTER
ABCD	C2614	022-08312-05A	CAP; 2.2 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2615M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2616M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2618	022-08312-08A	CAP; 10 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2620M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2622	022-08003-02A	CAP; .1 MFD 5% 50V; CERAMIC CHIP
ABCD	C2630	022-08242-34A	CAP; 100 PFD 10% 50V; CERAMIC DISC
ABCD	C2900	022-08048-32	CAP; 0.47 MFD 5% 50V;
ABCD	C2901	022-08309-11A	CAP; 47 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	C2902M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2903	022-08312-08A	CAP; 10 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2904	022-07914A	CAP; .1 MFD 20% 50V; CERAMIC CHIP
ABCD	C2904	022-08312-08A	CAP; 10 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2905	022-07914A	CAP; .1 MFD 20% 50V; CERAMIC CHIP
ABCD	C2905	022-08312-08A	CAP; 10 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2906	022-08241-34A	CAP; 100 PFD 5% 50V; CERAMIC DISC
ABCD	C2906	022-08312-08A	CAP; 10 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2907	022-08241-34A	CAP; 100 PFD 5% 50V; CERAMIC DISC
ABCD	C2908	022-08229-20	CAP; 0.0068 MFD 3% 1600VDC; POLYPROPYLENE
ABCD	C2908	022-08312-08A	CAP; 10 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2909M	022-08366-04A	CAP; 470 PFD 10% 50V; DDFF
ABCD	C2911M	022-08366-08A	CAP; 1,000 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C2912	022-08247-22A	CAP; 33 PFD 5% 50V; CERAMIC DISC
ABCD	C2912M	022-08366-04A	CAP; 470 PFD 10% 50V; DDFF
ABCD	C2913	022-08003A	CAP; .047 MFD 5% 50V; CERAMIC CHIP
ABCD	C2913M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2914	022-08312-07A	CAP; 4.7 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2915M	022-08366-04A	CAP; 470 PFD 10% 50V; DDFF

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COMPONENT PARTS LIST

A = H27E46DT C = H32E46DT
B = H27E46DT8 D = H36E46DT

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RC	REF	PART#	DESCRIPTION
ABCD	C2916	022-08156-12A	CAP; 10 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2917	022-08153-18A	CAP; 100 MFD 20% 16V; FF
ABCD	C2918	022-08156-12A	CAP; 10 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2918	022-08312-07A	CAP; 4.7 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2919M	022-08366-04A	CAP; 470 PFD 10% 50V; DDFF
ABCD	C2920	022-08312-07A	CAP; 4.7 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2920	022-08312-08A	CAP; 10 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2921	022-07914-02A	CAP; .47 MFD 20% 50V; CERAMIC CHIP
ABCD	C2921M	022-08366-04A	CAP; 470 PFD 10% 50V; DDFF
ABCD	C2922	022-07914A	CAP; .1 MFD 20% 50V; CERAMIC CHIP
ABCD	C2922	022-08312-07A	CAP; 4.7 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2923	022-08312-07A	CAP; 4.7 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2924	022-08003A	CAP; .047 MFD 5% 50V; CERAMIC CHIP
ABCD	C2924M	022-08366-04A	CAP; 470 PFD 10% 50V; DDFF
ABCD	C2925	022-08312-07A	CAP; 4.7 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2926	022-08312-07A	CAP; 4.7 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2927	022-08312-07A	CAP; 4.7 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2930	022-08003-04A	CAP; .010 MFD 5% 50V; CERAMIC CHIP
ABCD	C2933	022-07774-24	CAP; 0.1 MFD 10% 100V; POLYESTER
ABCD	C2934	022-08309-12A	CAP; 100 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	C2935M	022-08366-04A	CAP; 470 PFD 10% 50V; DDFF
ABCD	C2936M	022-08366-04A	CAP; 470 PFD 10% 50V; DDFF
ABCD	C2937M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C2947	022-08312-04A	CAP; 1 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2952	022-08312-08A	CAP; 10 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C2953M	022-08366-08A	CAP; 1,000 PFD 10% 50V; CERAMIC CHIP, LDLESS
CD	C3201	022-07811-01A	CAP; 0.00047 MFD 10% 1000V; CERAMIC DISC
ABCD	C3208	022-08227-11A	CAP; 0.1 MFD 5% 50V; POLYESTER
ABCD	C3213	022-07811A	CAP; 1000 PFD 10% 1000V; CERAMIC DISC
ABCD	C3214	022-08158-12A	CAP; 10 MFD 20% 100V; DD
CD	C3215	022-07914-02A	CAP; .47 MFD 20% 50V; CERAMIC CHIP
AB	C3215	022-07914A	CAP; .1 MFD 20% 50V; CERAMIC CHIP
ABCD	C3250	022-08003-04A	CAP; .010 MFD 5% 50V; CERAMIC CHIP
ABCD	C3422	022-08386	CAP; 220 PFD 10% 2000V;
ABCD	C3425	022-07914A	CAP; .1 MFD 20% 50V; CERAMIC CHIP
ABCD	C3432	022-08309-13A	CAP; 220 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	C3433	022-07958-24	CAP; 100 PFD 5% 100V; CERAMIC CHIP
ABCD	C3437	022-08003-04A	CAP; .010 MFD 5% 50V; CERAMIC CHIP
ABCD	C3440	022-07914-04A	CAP; 1 MFD 10% 50V; CERAMIC CHIP
ABCD	C3441	022-07914-04A	CAP; 1 MFD 10% 50V; CERAMIC CHIP
ABCD	C3447	022-08386	CAP; 220 PFD 10% 2000V;
ABCD	C3452	022-07914-02A	CAP; .47 MFD 20% 50V; CERAMIC CHIP
ABCD	C3453	022-08309-12A	CAP; 100 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	C3455	022-07914-04A	CAP; 1 MFD 10% 50V; CERAMIC CHIP
ABCD	C3456	022-07914-04A	CAP; 1 MFD 10% 50V; CERAMIC CHIP
ABCD	C3457	022-07914-04A	CAP; 1 MFD 10% 50V;

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RC	REF	PART#	DESCRIPTION
			CERAMIC CHIP
ABCD	C3458	022-07914-04A	CAP; 1 MFD 10% 50V; CERAMIC CHIP
ABCD	C3459	022-07914-04A	CAP; 1 MFD 10% 50V; CERAMIC CHIP
ABCD	C3460	022-07914-04A	CAP; 1 MFD 10% 50V; CERAMIC CHIP
D	C3461	0CE107DK618	CAP,AL.ELECTROLYTI; 100UF STD 50V M FL TP5;
ABCD	C4002	022-08190-01A	CAP; 1 MFD 20% 50V; NONPLZD ELECTROLYTIC
ABCD	C4003	022-08156-18A	CAP; 100 MFD 20% 50V; DD
ABCD	C4004	022-07914A	CAP; .1 MFD 20% 50V; CERAMIC CHIP
ABCD	C4005	022-07786-10C	CAP; 470 PFD 10% 500V; FF
ABCD	C4100	022-08190-02A	CAP; 2.2 MFD 20% 50V; NONPLZD ELECTROLYTIC
ABCD	C4101	022-08048-24A	CAP; 0.10 MFD 5% 50V; POLYESTER
ABCD	C4102	022-08048-12A	CAP; 0.010 MFD 5% 50V;
ABCD	C4103	022-07759-30A	CAP; 3300 PFD 2% 50V;
ABC	C4104	022-07777-14	CAP; 0.015 MFD 10% 200V;
D	C4104	022-07786-21	CAP; 4700 PFD 10% 500V; CERAMIC DISC
ABCD	C4105	022-07777-20B	CAP; 0.047 MFD 10% 200V; POLYESTER
ABCD	C4106	022-08188-07A	CAP; 33 MFD 20% 25V;
ABCD	C4107	022-08156-18A	CAP; 100 MFD 20% 50V; DD
ABCD	C4108	022-07914A	CAP; .1 MFD 20% 50V; CERAMIC CHIP
ABCD	C4109	022-08156-18A	CAP; 100 MFD 20% 50V; DD
ABCD	C4110	022-07914A	CAP; .1 MFD 20% 50V; CERAMIC CHIP
ABCD	C4111	022-08048-15A	CAP; 0.018 MFD 5% 50V; POLYESTER
ABCD	C4112	022-07811A	CAP; 1000 PFD 10% 1000V; CERAMIC DISC
ABCD	C4117	022-07786-08C	CAP; 330 PFD 10% 500V; CERAMIC DISC
ABCD	C4119	022-07786-15C	CAP; 1500 PFD 10% 500V; CERAMIC DISC

RC	REF	PART#	DESCRIPTION
ABCD	C4121	022-07958-48	CAP; 1000 PFD 5% 100V; CERAMIC CHIP
ABCD	C4123	022-08241-34A	CAP; 100 PFD 5% 50V; CERAMIC DISC
ABCD	C4124	022-08241-34A	CAP; 100 PFD 5% 50V; CERAMIC DISC
ABCD	C4125	022-07786-08C	CAP; 330 PFD 10% 500V; CERAMIC DISC
CD	C4803	022-07914A	CAP; .1 MFD 20% 50V; CERAMIC CHIP
CD	C4804	022-08167-07A	CAP; 10,000 PFD 5% 50V; CERAMIC CHIP
CD	C4805	022-07811-10	CAP; 0.0039MFD 20% 1000V; CERAMIC DISC
CD	C4806	022-07958-40	CAP; 470 PFD 5% 100V; CERAMIC CHIP
ABCD	C4807	022-07523-02	CAP; 0.02 MFD 20% 2000V; CERAMIC DISC
ABCD	C4807	205-00613	ADHESIVE; HOT-MELT #7804; FLAME RETARDANT
CD	C4808	022-07958-48	CAP; 1000 PFD 5% 100V; CERAMIC CHIP
CD	C4811	022-07958-22	CAP; 82 PFD 5% 100V; CERAMIC CHIP
CD	C4812	022-07914A	CAP; .1 MFD 20% 50V; CERAMIC CHIP
CD	C4813	022-07914A	CAP; .1 MFD 20% 50V; CERAMIC CHIP
ABCD	C4814	022-07523-02	CAP; 0.02 MFD 20% 2000V; CERAMIC DISC
ABCD	C4814	205-00613	ADHESIVE; HOT-MELT #7804; FLAME RETARDANT
CD	C4815	022-07914-02A	CAP; .47 MFD 20% 50V; CERAMIC CHIP
CD	C4816	022-07958-24	CAP; 100 PFD 5% 100V; CERAMIC CHIP
CD	C4820	022-07914A	CAP; .1 MFD 20% 50V; CERAMIC CHIP
CD	C4821	022-07914A	CAP; .1 MFD 20% 50V; CERAMIC CHIP
ABCD	C4824	022-07523-02	CAP; 0.02 MFD 20% 2000V;

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RC	REF	PART#	DESCRIPTION
			CERAMIC DISC
ABCD	C4824	205-00613	ADHESIVE; HOT-MELT #7804; FLAME RETARDANT
ABCD	C4825	022-07523-02	CAP; 0.02 MFD 20% 2000V; CERAMIC DISC
ABCD	C4825	205-00613	ADHESIVE; HOT-MELT #7804; FLAME RETARDANT
ABCD	C4946	022-08309-12A	CAP; 100 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	C4965	022-07786-01C	CAP; 220 PFD 10% 500V; CERAMIC DISC
ABCD	C4966	022-07786-01C	CAP; 220 PFD 10% 500V; CERAMIC DISC
ABCD	C4967	022-07786-01C	CAP; 220 PFD 10% 500V; CERAMIC DISC
ABCD	C5100	022-08310-11A	CAP; 47 MFD 20% 25V; ELECTROLYTIC, 1 SECT
ABCD	C5101	022-07523-01B	CAP; 0.01 MFD +80 % & -20 % 2; FF
ABCD	C5102	022-08049-24A	CAP; 0.10 MFD 10% 50V; POLYESTER
ABCD	C5103	022-08317-08	CAP; 10 MFD 20% 250V; ELECTROLYTIC, 1 SECT
ABCD	C5121M	022-08352-16A	CAP; 15 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C5122	022-08312-11A	CAP; 47 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C5123M	022-08366-20	CAP; 10,000 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C5124	022-08049-20A	CAP; 0.047 MFD 10% 50V; POLYESTER
ABCD	C5125	022-07877-16	CAP; 0.22 MFD 10% 250V;
ABCD	C5126	022-07786-11C	CAP; 560 PFD 10% 500V; CERAMIC DISC
ABCD	C5130	022-08242-26A	CAP; 47 PFD 10% 50V; CERAMIC DISC
ABCD	C5131	022-08003-04A	CAP; .010 MFD 5% 50V; CERAMIC CHIP
ABCD	C5132M	022-08366-20	CAP; 10,000 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C5133M	022-08366-20	CAP; 10,000 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C5134M	022-08366-20	CAP; 10,000 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C5141M	022-08352-16A	CAP; 15 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C5143M	022-08366-20	CAP; 10,000 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C5144	022-08049-20A	CAP; 0.047 MFD 10% 50V; POLYESTER
ABCD	C5145	022-07877-16	CAP; 0.22 MFD 10% 250V;
ABCD	C5146	022-07786-11C	CAP; 560 PFD 10% 500V; CERAMIC DISC
ABCD	C5161M	022-08352-16A	CAP; 15 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C5163M	022-08366-20	CAP; 10,000 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C5164	022-08049-20A	CAP; 0.047 MFD 10% 50V; POLYESTER
ABCD	C5165	022-07877-16	CAP; 0.22 MFD 10% 250V;
ABCD	C5166	022-07786-11C	CAP; 560 PFD 10% 500V; CERAMIC DISC
ABCD	C5167	022-07523-01B	CAP; 0.01 MFD +80 % & -20 % 2; FF
ABCD	C5168	022-08317-08	CAP; 10 MFD 20% 250V; ELECTROLYTIC, 1 SECT
ABCD	C5169	022-08310-12A	CAP; 100 MFD 20% 25V; ELECTROLYTIC, 1 SECT
ABCD	C6001M	022-08366-04A	CAP; 470 PFD 10% 50V; DDFF
ABCD	C6002M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6003M	022-08366-04A	CAP; 470 PFD 10% 50V; DDFF
ABCD	C6004M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6005M0	022-08366A	CAP; 220 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C6006	022-08312-04A	CAP; 1 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C6007M	022-08366-08A	CAP; 1,000 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C6008M0	022-08366A	CAP; 220 PFD 10% 50V; CERAMIC CHIP, LDLESS

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RC	REF	PART#	DESCRIPTION
ABCD	C6009	022-08049-24A	CAP; 0.10 MFD 10% 50V; POLYESTER
ABCD	C6010M0	022-08352-19A	CAP; 20 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6011M0	022-08352-19A	CAP; 20 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6012M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C6013	022-08309-13A	CAP; 220 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	C6014M	022-08352-23A	CAP; 30 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6015M	022-08352-23A	CAP; 30 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6016	022-08312-05A	CAP; 2.2 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C6017	022-07774-24	CAP; 0.1 MFD 10% 100V; POLYESTER
ABCD	C6018M	022-08366-08A	CAP; 1,000 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C6019M0	022-08352-38A	CAP; 120 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6020	022-08312-07A	CAP; 4.7 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C6021M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C6022M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6023M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6024M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6025M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6026M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6027M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6028M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6029M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6030M	022-08366-04A	CAP; 470 PFD 10% 50V; DDFF
ABCD	C6031M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6033M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6034M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6035	022-07914-02A	CAP; .47 MFD 20% 50V; CERAMIC CHIP
ABCD	C6036M	022-08366-08A	CAP; 1,000 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C6037M	022-08366-08A	CAP; 1,000 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C6038M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6039M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6040M0	022-08366A	CAP; 220 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C6041M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6042M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C6043M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C6044	022-08312-07A	CAP; 4.7 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	C6047M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6048M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6049M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6050M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6051M	022-08366-04A	CAP; 470 PFD 10% 50V; DDFF
ABCD	C6052M	022-08366-04A	CAP; 470 PFD 10% 50V; DDFF
ABCD	C6053M	022-08366-04A	CAP; 470 PFD 10% 50V; DDFF
ABCD	C6054M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS

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RC	REF	PART#	DESCRIPTION
ABCD	C6056M	022-08368-20A	CAP; 10,000 PFD 10% 25V; CERAMIC CHIP, LDLESS
ABCD	C6058	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6060M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6061M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6062M	022-08366-08A	CAP; 1,000 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C6063M	022-08352-28A	CAP; 47 PFD 5% 50V; CERAMIC CHIP, LDLESS
ABCD	C6068M	022-08366-08A	CAP; 1,000 PFD 10% 50V; CERAMIC CHIP, LDLESS
ABCD	C6071	022-08309-15A	CAP; 470 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	C6072	022-08309-12A	CAP; 100 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	C6090	022-08309-12A	CAP; 100 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	C6091M0	022-08352-31A	CAP; 62 PFD 5% 50V; DD
ABCD	C801	022-08049-20A	CAP; 0.047 MFD 10% 50V; POLYESTER
ABCD	C802	022-08049-16A	CAP; 0.022 MFD 10% 50V; POLYESTER
ABCD	C809	022-08049-20A	CAP; 0.047 MFD 10% 50V; POLYESTER
ABCD	C811	022-08049-16A	CAP; 0.022 MFD 10% 50V; POLYESTER
ABCD	C813	022-08310-12A	CAP; 100 MFD 20% 25V; ELECTROLYTIC, 1 SECT
ABCD	C814	022-08049-24A	CAP; 0.10 MFD 10% 50V; POLYESTER
ABCD	C817	022-08049-24A	CAP; 0.10 MFD 10% 50V; POLYESTER
ABCD	C818	022-08049-24A	CAP; 0.10 MFD 10% 50V; POLYESTER
ABCD	CM6032	022-08366-16A	CAP; 4,700 PFD 10% 50V; FF
ABCD	CON1	P078-03571	CONNECTOR; 11 POSITION, 2.5MM; VERY LOW INSERTION
ABCD	CON2	P078-03571	CONNECTOR; 11 POSITION, 2.5MM; VERY LOW INSERTION
ABCD	CRY6001	224-00074-02A	CRYSTAL; QUARTZ; 8 MHZ
ABCD	CRY6002	P224-00262A	RESONATOR; CERAMIC 27.0 MHZ;
ABCD	CX1235	022-08309-16	CAP; 1000 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	CX1243	022-08310-17	CAP; 2200 MFD 20% 25V; ELECTROLYTIC, 1 SECT
ABCD	CX1245	022-08153-26	CAP; 2200 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	CX2109	022-08218-06	CAP; 1,000 MFD 20% 25V; ELECTROLYTIC, 1 SECT
CD	CX2110	022-08218-06	CAP; 1,000 MFD 20% 25V; ELECTROLYTIC, 1 SECT
AB	CX2110	P022-08545-12	CAP; 1000UF, 20%, 25V; ALUMINUM ELECTROLYTI
ABCD	CX2111	022-08221	CAP; 100 MFD 20% 63V; ELECTROLYTIC, 1 SECT
CD	CX2112	022-08221	CAP; 100 MFD 20% 63V; ELECTROLYTIC, 1 SECT
AB	CX2112	P022-08548-05	CAP; 100UF, 20%, 63V; ALUMINUM ELECTROLYTI
ABCD	CX2606	022-08309-16	CAP; 1000 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	CX2621	022-08309-16	CAP; 1000 MFD 20% 16V; ELECTROLYTIC, 1 SECT
ABCD	CX2911	022-08157-22	CAP; 470 MFD 20% 63V; ELECTROLYTIC, 1 SECT
ABCD	CX2914	022-08320-07	CAP; 4.7 MFD 20% 450V; ELECTROLYTIC, 1 SECT
ABCD	CX2941	022-08310-15	CAP; 470 MFD 20% 25V; ELECTROLYTIC, 1 SECT
ABCD	CX2942	022-08310-15	CAP; 470 MFD 20% 25V; ELECTROLYTIC, 1 SECT
AB	CX3200	022-08265-13	CAP; 0.011 MFD 3% 1600VDC;
CD	CX3200	022-08265-15	CAP; 0.013 MFD 3% 1600VDC; POLYPROPYLENE
D	CX3203	022-08231-07	CAP; 0.18 MFD 5% 200V; POLYPROPYLENE
ABC	CX3203	022-08231-09	CAP; 0.27 MFD 5% 200V;
AB	CX3204	022-08231-06	CAP; 0.15 MFD 5% 200V;

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COMPONENT PARTS LIST

A = H27E46DT C = H32E46DT
B = H27E46DT8 D = H36E46DT

NOTE: This list will enable you to easily determine the parts used on each Model, Chassis, or Assembly.

RC	REF	PART#	DESCRIPTION
D	CX3204	022-08231-08	CAP; 0.22 MFD 5% 200V; POLYPROPYLENE
C	CX3204	022-08231-09	CAP; 0.27 MFD 5% 200V;
ABD	CX3205	022-08231-19	CAP; 1.8 MFD 5% 200V; POLYPROPYLENE
C	CX3205	022-08231-20	CAP; 2.2 MFD 5% 200V;
ABCD	CX3216	022-08063-02	CAP; 530 PFD 5% 3000V; CERAMIC DISC
ABCD	CX3217	022-07811-06	CAP; 10000 PFD 20% 1000V; CERAMIC DISC
ABCD	CX3400	022-07431-12	CAP; 0.0022 MFD 20% LINE BYPA; CERAMIC DISC
ABCD	CX3401	022-07867-13	CAP; 0.47 MFD 20% 250VAC; POLYESTER
ABCD	CX3403	022-07811A	CAP; 1000 PFD 10% 1000V; CERAMIC DISC
ABCD	CX3404	022-07811A	CAP; 1000 PFD 10% 1000V; CERAMIC DISC
ABCD	CX3405	022-07811A	CAP; 1000 PFD 10% 1000V; CERAMIC DISC
ABCD	CX3406	022-07811A	CAP; 1000 PFD 10% 1000V; CERAMIC DISC
ABCD	CX3407	022-08444-13	CAP; 680 MFD 20% 200V; ELECTROLYTIC, 1 SECT
ABCD	CX3408	022-08386-10	CAP; 1500 PFD 10% 2000V; CERAMIC DISC
ABCD	CX3409	022-07786C	CAP; 1000 PFD 10% 500V; CERAMIC DISC
ABCD	CX3410	022-08310-13A	CAP; 220 MFD 20% 25V; ELECTROLYTIC, 1 SECT
ABCD	CX3411	P022-08547-12	CAP; 1000UF, 20%, 50V; ALUMINUM ELECTROLYTI
CD	CX3412	022-08218-06	CAP; 1,000 MFD 20% 25V; ELECTROLYTIC, 1 SECT
AB	CX3412	P022-08545-12	CAP; 1000UF, 20%, 25V; ALUMINUM ELECTROLYTI
ABCD	CX3413	022-08539-01	CAP; 1500 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	CX3414	022-08539-01	CAP; 1500 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	CX3415	022-08154-28	CAP; 4700 MFD 20% 25V; ELECTROLYTIC, 1 SECT
ABCD	CX3420	022-07431-12	CAP; 0.0022 MFD 20% LINE BYPA; CERAMIC DISC
ABCD	CX3421	022-07431-12	CAP; 0.0022 MFD 20% LINE BYPA; CERAMIC DISC
ABCD	CX3426	022-07759-33A	CAP; 1800 PFD 2% 50V;
ABCD	CX3428	022-08063-02	CAP; 530 PFD 5% 3000V; CERAMIC DISC
ABCD	CX3429	022-07914-02A	CAP; .47 MFD 20% 50V; CERAMIC CHIP
ABCD	CX3430	022-08154-20A	CAP; 220 MFD 20% 25V; ELECTROLYTIC, 1 SECT
ABCD	CX3431	022-08310-19	CAP; 4700 MFD 20% 25V; ELECTROLYTIC, 1 SECT
ABCD	CX3438	022-08043-03	CAP; 0.022 MFD 10% 630V; POLYESTER
ABCD	CX3442	022-08539-01	CAP; 1500 MFD 20% 50V; ELECTROLYTIC, 1 SECT
ABCD	CX3444	022-07958-40	CAP; 470 PFD 5% 100V; CERAMIC CHIP
ABCD	CX3445	022-08317-09	CAP; 22 MFD 20% 250V; ELECTROLYTIC, 1 SECT
ABCD	CX3450	022-08386-04	CAP; 470 PFD 10% 2000V;
ABCD	CX3451	022-08218-06	CAP; 1,000 MFD 20% 25V; ELECTROLYTIC, 1 SECT
ABCD	CX4115	P022-08541-26	CAP; 6.8 MFD 5% 250VDC; POLYPROPYLENE
CD	CX4801	022-08190-08	CAP; 47 MFD 20% 50V; NONPLZD ELECTROLYTIC
ABCD	CX6070	022-08310-16	CAP; 1000 MFD 20% 25V; ELECTROLYTIC, 1 SECT
ABCD	CX815	022-07508-12	CAP; 4700 MFD 20% 35V; ELECTROLYTIC, 1 SECT
ABCD	CX816	022-08310-16	CAP; 1000 MFD 20% 25V; ELECTROLYTIC, 1 SECT
ABCD	CX819	022-08310-16	CAP; 1000 MFD 20% 25V; ELECTROLYTIC, 1 SECT
ABCD	D1450	103-00344-08A	DIODE; LOW VOLTAGE GENERAL;
ABCD	D2102	103-00344-06A	DIODE; LOW VOLTAGE GENERAL;

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COMPONENT PARTS LIST

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B = H27E46DT8 D = H36E46DT

NOTE: This list will enable you to easily determine the parts used on each Model, Chassis, or Assembly.

RC	REF	PART#	DESCRIPTION
ABCD	D2103	103-00344-06A	DIODE; LOW VOLTAGE GENERAL;
ABCD	D2201	103-00461A	DIODE; ULTRA FAST, HIGH COND
ABCD	D2202	103-00461A	DIODE; ULTRA FAST, HIGH COND
ABCD	D2203	103-00461A	DIODE; ULTRA FAST, HIGH COND
ABCD	D2204	103-00461A	DIODE; ULTRA FAST, HIGH COND
ABCD	D2205	103-00461A	DIODE; ULTRA FAST, HIGH COND
ABCD	D2206	103-00461A	DIODE; ULTRA FAST, HIGH COND
ABCD	D2207	103-00461A	DIODE; ULTRA FAST, HIGH COND
ABCD	D2208	103-00461A	DIODE; ULTRA FAST, HIGH COND
ABCD	D2209	103-00461A	DIODE; ULTRA FAST, HIGH COND
ABCD	D2210	103-00355	DIODE; LOW VOLTAGE, SILICON
ABCD	D2901	103-00471A	DIODE; LOW VOLTAGE, SILICON
ABCD	D2902	103-00471A	DIODE; LOW VOLTAGE, SILICON
ABCD	D2903	103-00471A	DIODE; LOW VOLTAGE, SILICON
ABCD	D2904	103-00471A	DIODE; LOW VOLTAGE, SILICON
ABCD	D2905	103-00471A	DIODE; LOW VOLTAGE, SILICON
ABCD	D2906	103-00344-06A	DIODE; LOW VOLTAGE GENERAL;
ABCD	D2907	P103-00594-05	DIODE; ULTRA FAST PLASTIC RECTI; 400V
ABCD	D2908	103-00471A	DIODE; LOW VOLTAGE, SILICON
ABCD	D2909	103-00471A	DIODE; LOW VOLTAGE, SILICON
ABCD	D2910	103-00471A	DIODE; LOW VOLTAGE, SILICON
ABCD	D2911	103-00471A	DIODE; LOW VOLTAGE, SILICON
ABCD	D2920	103-00471A	DIODE; LOW VOLTAGE, SILICON
ABCD	D2921	103-00471A	DIODE; LOW VOLTAGE, SILICON
ABCD	D3206	103-00344-06A	DIODE; LOW VOLTAGE GENERAL;
ABCD	D3207	103-00471A	DIODE; LOW VOLTAGE, SILICON
ABCD	D3208	103-00461A	DIODE; ULTRA FAST, HIGH COND
ABCD	D3404	126-02519-02	HEATSINK; TRANSISTOR;
ABCD	D3404	P103-00594-05	DIODE; ULTRA FAST PLASTIC RECTI; 400V
ABCD	D3405	126-02519-02	HEATSINK; TRANSISTOR;
ABCD	D3405	P103-00594-05	DIODE; ULTRA FAST PLASTIC RECTI; 400V
ABCD	D3406	P103-00594-05	DIODE; ULTRA FAST PLASTIC RECTI; 400V
ABCD	D3407	P103-00594-05	DIODE; ULTRA FAST PLASTIC RECTI; 400V
ABCD	D3408	126-02519-02	HEATSINK; TRANSISTOR;
ABCD	D3408	P103-00594-05	DIODE; ULTRA FAST PLASTIC RECTI; 400V
ABCD	D3416	012-09632	METAL STAMPING; BRACKET; DIODE SUPPORT
ABCD	D3416	103-00417-06A	DIODE; LOW VOLTAGE, SILICON
ABCD	D3416	149-00576-01	CORE; FERRITE BEAD;
ABCD	D3417	103-00344-08A	DIODE; LOW VOLTAGE GENERAL;
ABCD	D3418	103-00369-09A	DIODE; LOW VOLTAGE, SILICON
ABCD	D3420	149-00549	CORE, FERRITE; WITH CAPTIVATED THRU-LEA;
ABCD	D3421	012-09632	METAL STAMPING; BRACKET; DIODE SUPPORT
ABCD	D3421	103-00417-06A	DIODE; LOW VOLTAGE, SILICON
ABCD	D3421	149-00576-01	CORE; FERRITE BEAD;
ABCD	D4	103-00471A	DIODE; LOW VOLTAGE, SILICON
ABCD	D4000	103-00471A	DIODE; LOW VOLTAGE, SILICON
ABCD	D4001	103-00344-06A	DIODE; LOW VOLTAGE GENERAL;
ABCD	D4002	103-00471A	DIODE; LOW VOLTAGE, SILICON
ABCD	D4100	103-00471A	DIODE; LOW VOLTAGE, SILICON
ABCD	D4102	103-00360-02	DIODE; FAST RECOVERY RECTIFIER;
CD	D4801	103-00295A	DIODE; LOW VOLTAGE, SILICON
CD	D4802	103-00295A	DIODE; LOW VOLTAGE, SILICON
CD	D4805	103-00295A	DIODE; LOW VOLTAGE, SILICON
CD	D4806	103-00295A	DIODE; LOW VOLTAGE, SILICON
CD	D4807	103-00295A	DIODE; LOW VOLTAGE, SILICON

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RC	REF	PART#	DESCRIPTION
CD	D4808	103-00295A	DIODE; LOW VOLTAGE, SILICON
ABCD	D4809	103-00561A	DIODE; HIGH-VOLTAGE; 8KV/ 5MA
ABCD	D4810	103-00561A	DIODE; HIGH-VOLTAGE; 8KV/ 5MA
ABCD	D5104	103-00461A	DIODE; ULTRA FAST, HIGH COND
ABCD	D5105	103-00461A	DIODE; ULTRA FAST, HIGH COND
ABCD	D5106	103-00461A	DIODE; ULTRA FAST, HIGH COND
ABCD	D5107	103-00415-02A	DIODE; LOW VOLTAGE, SILICON
ABCD	D5108	103-00415-02A	DIODE; LOW VOLTAGE, SILICON
ABCD	D5109	103-00415-02A	DIODE; LOW VOLTAGE, SILICON
ABCD	D5110	103-00461A	DIODE; ULTRA FAST, HIGH COND
ABCD	D5111	103-00344-06A	DIODE; LOW VOLTAGE GENERAL;
ABCD	D6001	103-00461A	DIODE; ULTRA FAST, HIGH COND
ABCD	D6002	103-00461A	DIODE; ULTRA FAST, HIGH COND
ABCD	D6003	103-00461A	DIODE; ULTRA FAST, HIGH COND
ABCD	D6004	103-00461A	DIODE; ULTRA FAST, HIGH COND
ABCD	DAG1	PA-19197-01	GROUNDING ASSY, WHITE WHITE; DAG
ABCD	DAG2	PA-19197-01	GROUNDING ASSY, WHITE WHITE; DAG
AB	DAG3	PA-19257-01	GROUNDING ASSY, WHITE WHITE;
CD	DAG3	PA-19257-02	GROUNDING ASSY, WHITE
ABCD	DL2400	223-00045	INTD CKT PKG; NTSC COMB FILTER, HYBRID;
ABCD	DTP1	050-02847	CONNECTOR/CABLE ASSY, 10 CONTACT, 2 UP;
ABCD	DTP2	050-02840-05	CONNECTOR/CABLE ASSY, 2.5MM, 3 CONTACT
ABCD	DTP3	050-02852-01	CONNECTOR/CABLE ASSY, SHIELDED; 2 CIRCUIT
ABCD	DTP3	058-00586-02	PLUG; MULTIPRONG, NATURAL COLO; 2 POSITION
ABCD	DX3200	103-00590	DIODE; DAMPER;
ABCD	DX3401	103-00461A	DIODE; ULTRA FAST, HIGH COND
ABCD	DX3402	103-00344-08A	DIODE; LOW VOLTAGE GENERAL;
ABCD	DX3403	103-00344-08A	DIODE; LOW VOLTAGE GENERAL;
ABCD	DX3409	103-00461A	DIODE; ULTRA FAST, HIGH COND
ABCD	DX3411	103-00344-08A	DIODE; LOW VOLTAGE GENERAL;
ABCD	DX3413	103-00344-06A	DIODE; LOW VOLTAGE GENERAL;
ABCD	DX3414	103-00344-08A	DIODE; LOW VOLTAGE GENERAL;
ABCD	DX3415	103-00344-08A	DIODE; LOW VOLTAGE GENERAL;
ABCD	DX3419	971-0016	WIRE,JUMP; TIN HDC 0.60H;
ABCD	DZ2200	103-00279-09A	DIODE; ZENER; 4.7V 0.5 W
ABCD	DZ2201	103-00279-18A	DIODE; ZENER; 9.1V 0.5W
ABCD	DZ2202	103-00279-18A	DIODE; ZENER; 9.1V 0.5W
ABCD	DZ2600	103-00279-10A	DIODE; ZENER; 5.1V 0.5W
ABCD	DZ2904	103-00279-18A	DIODE; ZENER; 9.1V 0.5W
ABCD	DZ2905	103-00279-18A	DIODE; ZENER; 9.1V 0.5W
ABCD	DZ2906	103-00279-18A	DIODE; ZENER; 9.1V 0.5W
ABCD	DZ2907	103-00279-18A	DIODE; ZENER; 9.1V 0.5W
ABCD	DZ2908	103-00279-18A	DIODE; ZENER; 9.1V 0.5W
ABCD	DZ2909	103-00279-18A	DIODE; ZENER; 9.1V 0.5W
ABCD	DZ3208	103-00336-16A	DIODE; ZENER; 8.2V 0.5W 2%
CD	DZ4803	103-00279-09A	DIODE; ZENER; 4.7V 0.5 W
ABCD	E5121	6918VAX002E	SPARK GAP,AXIAL; WSP-351M 350V 20% AXIAL
ABCD	E5141	6918VAX002E	SPARK GAP,AXIAL; WSP-351M 350V 20% AXIAL
ABCD	E5161	6918VAX002E	SPARK GAP,AXIAL; WSP-351M 350V 20% AXIAL
ABCD	E/VGND	A-19270-P07	GROUNDING ASSY, WHITE WHITE;

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RC	REF	PART#	DESCRIPTION
ABCD	EX3400	P038-00108-01	SPARK GAP; HIGH VOLTAGE, 4KV DC;
ABCD	FB3400	149-00417	FERRITE CORE; SLEEVE;
ABCD	FB3401	149-00417	FERRITE CORE; SLEEVE;
ABCD	FB3404	149-00549	CORE, FERRITE; CAPTIVATED THRU-LEA
ABCD	FB3405	149-00549	CORE, FERRITE; CAPTIVATED THRU-LEA
ABCD	FB3406	149-00576-01	CORE; FERRITE BEAD;
ABCD	FB3407	149-00549	CORE, FERRITE; CAPTIVATED THRU-LEA
ABCD	FB4100	149-00417	FERRITE CORE; SLEEVE;
ABCD	FX3400	136-00114-23C	FUSE; NORMAL LAG; 4 AMP 250V
ABCD	FX3401	136-00167-12A	FUSE; TIME DELAY; 5 AMP 125V
ABCD	FX3402	136-00167-11A	FUSE; TIME DELAY; 4 AMP 125V
ABCD	FX3403	136-00167-11A	FUSE; TIME DELAY; 4 AMP 125V
ABCD	FX3404	136-00167-11A	FUSE; TIME DELAY; 4 AMP 125V
ABCD	FX3405	136-00167-03A	FUSE; TIME DELAY; 0.500 AMP 125V
ABCD	G2	366-043A	WAFER; ASSY,PLUG(1P)
ABCD	IC1201	221-00792	INTEGRATED CKT; VIDEO IF
ABCD	IC1202	221-00166	INTEGRATED CKT; 5 VOLT, 500MA; LINEAR, REGULATOR
ABCD	IC1203	221-00213-04	INTEGRATED CKT; 12 VOLT, 1 AMP; LINEAR, REGULATOR
ABCD	IC1204	126-03326-02	HEATSINK; TRANSISTOR
ABCD	IC1204	221-00213-08	INTEGRATED CKT; 10 VOLT, 1 AMP; LINEAR, REGULATOR
ABCD	IC1400	0ISO0205400A	IC,SONY; CXA2054S 48P,SDIP BK US
ABCD	IC2900	221-00121	INTEGRATED CKT; QUAD COMPARATOR
ABCD	IC2901	221-00240	INTEGRATED CKT; DUAL WIDEBAND, OPERATION
ABCD	IC3201	221-00240	INTEGRATED CKT; DUAL WIDEBAND, OPERATION

RC	REF	PART#	DESCRIPTION
ABCD	IC4100	221-00345-01	INTEGRATED CKT; PULSE WIDTH MODULATOR
CD	IC4801	221-00559	INTEGRATED CKT; HIGH PERFORMANCE OP-AMP
CD	IC4802	221-00559	INTEGRATED CKT; HIGH PERFORMANCE OP-AMP
ABCD	IC5121	126-03390-08	HEATSINK; TRANSISTOR
ABCD	IC5121	221-01404	INTEGRATED CKT; VIDEO OUTPUT AMP;
ABCD	IC5141	126-03390-08	HEATSINK; TRANSISTOR;
ABCD	IC5141	221-01404	INTEGRATED CKT; VIDEO OUTPUT AMP;
ABCD	IC5161	126-03390-08	HEATSINK; TRANSISTOR;
ABCD	IC5161	221-01404	INTEGRATED CKT; VIDEO OUTPUT AMP;
ABCD	IC6000	078-03443	CONNECTOR; 52 POSITION;
ABCD	IC6000	221-01391-P07	INTEGRATED CKT; 8-BIT MICROCOMPUTER
ABCD	IC6001	078-03283	SOCKET, IC; 8 CIRCUIT
ABCD	IC6001	221-00745-05	INTEGRATED CKT; 8K BIT SERIAL EEPROM
ABCD	IC6002	221-01177A	INTEGRATED CKT; SYSTEM RESET
ABCD	IC6004	221-00166	INTEGRATED CKT; 5 VOLT, 500MA; LINEAR, REGULATOR
ABCD	IC6005	221-00167-01A	INTEGRATED CKT; VOLTAGE REGULATOR; 5V 100MA
ABCD	IC801	0ISA428200A	IC,SANYO; LA4282 12S 2CHX10W AUDIO
ABCD	IC801	114-00803-04	SCREW, THD FORM; 6-20 X 0.250 TP B TIN
ABCD	IC801	126-02174-35	HEATSINK; TRANSISTOR
CD	ICX2100	126-03755	HEATSINK; IC
AB	ICX2100	126-03755-P01	HEATSINK; IC
ABCD	ICX2100	221-01088-01	INTEGRATED CKT; VERTICAL DEFLECTION
ABCD	ICX2200	221-01376	INTEGRATED CKT; MULTICOM-PONENT PROCESSOR
ABCD	ICX2201	221-01377	INTEGRATED CKT; NTSC/PAL CHROMA DECODER
ABCD	ICX2600	221-01378	INTEGRATED CKT; MULTISCAN

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RC	REF	PART#	DESCRIPTION
			DRIVER
ABCD	ICX2900	221-01053	INTEGRATED CKT; A/V SWITCH
ABCD	ICX3400	223-00060-01	INTEGRATED CKT; THICK FILM, HYBRID; VOLTAGE REGULATOR
ABCD	ICX3400	P126-03762-01	HEATSINK; TRANSISTOR
ABCD	ICX3401	223-00048-05	INTD CKT PKG; AMP, HYBRID ERROR
ABCD	ICX3402	162-00028	OPTO-COUPLER
ABCD	ICX3406	223-00060-01	INTEGRATED CKT; THICK FILM, HYBRID; VOLTAGE REGULATOR
ABCD	ICX3407	221-00265-03A	INTEGRATED CKT; ADJUSTABLE SHUNT REGULAT;
ABCD	ICX3408	162-00028	OPTO-COUPLER
ABCD	ICX3409	P126-03748-05	HEAT SINK; IC, HORIZONTAL DEFLECTION;
ABCD	ICX3802	221-00213	INTEGRATED CKT; 5 VOLT, 1 AMP; LINEAR, REGULATOR
ABCD	J0001	078-03428-02	CONNECTOR; 15 POSITION, D-TYPE RIGH
AD	J0001	971-0016	WIRE,JUMP; TIN HDC 0.60H
CD	J0201	971-0016	WIRE,JUMP; TIN HDC 0.60H
A	J1	971-0016	WIRE,JUMP; TIN HDC 0.60H
ABCD	J1	A-19078-P04	JACK ASSY; 9 PHONO/2 Y-C
ACD	J1	PA-19270-03	GROUNDING ASSY, WHITE
ABCD	J12	078-03403	CONNECTOR; PHONO WITH SWITCH
ABCD	J13	078-03402-01	CONNECTOR; PHONO; WHITE
ABCD	J14	078-03402	CONNECTOR; PHONO; RED
ABCD	J15	078-03428-01	CONNECTOR; 15 POSITION, D-TYPE; PC MOUNTED
ABCD	J3403	149-00576-01	CORE; FERRITE BEAD
ABCD	J3404	971-0016	WIRE,JUMP; TIN HDC 0.60H
ABCD	KX3400	195-00161	RELAY; SPST; 12 VDC COIL
ABCD	KX3401	195-00161	RELAY; SPST; 12 VDC COIL
ABCD	L1200	020-04493A	COIL; RCF, TUNABLE
ABCD	L1201	020-04277-42A	COIL; 18 MICROHENRY; RCF, FIXED
ABCD	L1202	020-04277-63A	COIL; 0.39 MICROHENRY; RCF, FIXED
ABCD	L1205	020-03907-24A	COIL; 100 MICROHENRY; RCF, FIXED
ABCD	L1206	020-04493A	COIL; RCF, TUNABLE;
ABCD	L1207	020-04277-23A	COIL; 12 MICROHENRY; RCF, FIXED
ABCD	L1400	020-03907-24A	COIL; 100 MICROHENRY; RCF, FIXED
ABCD	L2200	020-03907-16A	COIL; 22 MICROHENRY; RCF, FIXED
ABCD	L2201	0LA0471K139	INDUCTOR,AXIAL LEAD; 4.7UH K 4*10.5 TP
ABCD	L2202	020-03907-12A	COIL; 10 MICROHENRY; FF
ABCD	L2400	020-04277-20A	COIL; 6.8 MICROHENRY; RCF, FIXED
ABCD	L2401	020-04277-39A	COIL; 10 MICROHENRY; RCF, FIXED
ABCD	L2402	020-04277-20A	COIL; 6.8 MICROHENRY; RCF, FIXED
ABCD	L2403	020-04277-34A	COIL; 100 MICROHENRY; RCF, FIXED
ABCD	L2601	020-04462-32A	COIL; 470 MICROHENRY; RCF, FIXED
ABCD	L2900	020-03907-16A	COIL; 22 MICROHENRY; RCF, FIXED
ABCD	L2900	149-00417	FERRITE CORE; SLEEVE;
ABCD	L3200	020-04279-06	COIL; LINEARITY;
ABCD	L3200	205-00613	ADHESIVE; HOT-MELT #7804; FLAME RETARDANT
ABCD	L3400	020-03907-24A	COIL; 100 MICROHENRY; RCF, FIXED
ABCD	L3401	020-04405-46	COIL; 47 MICROHENRY; RCF, FIXED
ABCD	L3402	020-04405-46	COIL; 47 MICROHENRY; RCF, FIXED
ABCD	L3403	020-04462-20A	COIL; 47 MICROHENRY; RCF, FIXED
ABCD	L3404	020-04462-20A	COIL; 47 MICROHENRY; RCF, FIXED
ABCD	L3406	020-04462-20A	COIL; 47 MICROHENRY; RCF, FIXED
ABCD	L3407	020-04462-16A	COIL; 22 MICROHENRY; RCF, FIXED

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COMPONENT PARTS LIST

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RC	REF	PART#	DESCRIPTION
ABCD	L4100	020-04547	COIL; CHOKE, SCAN BOOST;
ABCD	L5103	020-04277-22A	COIL; 10 MICROHENRY; RCF, FIXED
ABCD	L5121	0LA0681K139	INDUCTOR,AXIAL LEAD; 6.8UH K 4*10.5 TP
ABCD	L5141	0LA0681K139	INDUCTOR,AXIAL LEAD; 6.8UH K 4*10.5 TP
ABCD	L5161	0LA0681K139	INDUCTOR,AXIAL LEAD; 6.8UH K 4*10.5 TP
ABCD	L6001	0LA0471K119	INDUCTOR,AXIAL LEAD; 4.7UH K 2.3*3.4 TP
ABCD	L6003	0LA0101K119	INDUCTOR,AXIAL LEAD; 1.0UH K 2.3*3.4 TP
ABCD	L6004	0LA0101K119	INDUCTOR,AXIAL LEAD; 1.0UH K 2.3*3.4 TP
ABCD	L6005	0LA0101K119	INDUCTOR,AXIAL LEAD; 1.0UH K 2.3*3.4 TP
ABCD	L6007	0LA0471K119	INDUCTOR,AXIAL LEAD; 4.7UH K 2.3*3.4 TP
ABCD	LX3400	095-04369	TRANSFORMER; LINE CHOKE, COMMON MODE;
ABCD	LX3405	971-0016	WIRE,JUMP; TIN HDC 0.60H;
ABCD	MPI	078-03481-01	JACK; MODULAR SIDE ENTRY; 6 POSITION
ABC	NVGND0	086-00737	TERMINAL; MALE; BOARD MOUNTED
ABCD	P1	A-19270	GROUNDING ASSY, WHITE WHITE;
ABD	PCB	204-03389-P06	PCB; DAUGHTER BOARD; CS
D	PCB0	PA-19298-03	PCB ASSY; DAUGHTER;
D	PCB0	PF-54387	PCB ASSY; LARGE SIGNAL MODULE
D	PCB0	PF-54391	PCB ASSY; DAUGHTER
ABCD	PTD1	P058-00671-10	PLUG; 2.5MM 0.025 SQUARE VERTI; HEADER ASSY
ABCD	PTD2	P058-00671-03	PLUG; 2.5MM 0.025 SQUARE VERTI; HEADER ASSY
ABCD	PTD3	058-00586-02	PLUG; MULTIPRONG, NATURAL COLO; 2 POSITION
ABCD	Q0800	121-01310A	TRANSISTOR; NPN, SILICON;
ABCD	Q1202	121-01311A	TRANSISTOR; PNP, SILICON;
ABCD	Q1203	121-01311A	TRANSISTOR; PNP, SILICON;
ABCD	Q1204	121-01310A	TRANSISTOR; NPN, SILICON;
ABCD	Q1205	121-01310A	TRANSISTOR; NPN, SILICON;
ABCD	Q1401	121-01310A	TRANSISTOR; NPN, SILICON;
ABCD	Q1402	121-01311A	TRANSISTOR; PNP, SILICON;
ABCD	Q1403	121-01310A	TRANSISTOR; NPN, SILICON;
ABCD	Q1404	121-01311A	TRANSISTOR; PNP, SILICON;
ABCD	Q1405	121-01310A	TRANSISTOR; NPN, SILICON;
ABCD	Q2200	121-01261A	TRANSISTOR; NPN, SILICON;
ABCD	Q2201	121-01261A	TRANSISTOR; NPN, SILICON;
ABCD	Q2202	121-01261A	TRANSISTOR; NPN, SILICON;
ABCD	Q2203	121-01311A	TRANSISTOR; PNP, SILICON;
ABCD	Q2214	121-01311A	TRANSISTOR; PNP, SILICON;
ABCD	Q2400	121-01311A	TRANSISTOR; PNP, SILICON;
ABCD	Q2401	121-01310A	TRANSISTOR; NPN, SILICON;
ABCD	Q2402	121-01310A	TRANSISTOR; NPN, SILICON;
ABCD	Q2601	121-01310A	TRANSISTOR; NPN, SILICON;
ABCD	Q2602	121-01310A	TRANSISTOR; NPN, SILICON;
ABCD	Q2900	121-01314A	TRANSISTOR; NPN, SILICON;
ABCD	Q2901	121-01310A	TRANSISTOR; NPN, SILICON;
ABCD	Q2902	121-01311A	TRANSISTOR; PNP, SILICON;
ABCD	Q2902	121-01314A	TRANSISTOR; NPN, SILICON;
ABCD	Q2903	121-01311A	TRANSISTOR; PNP, SILICON;
ABCD	Q2903	121-01315A	TRANSISTOR; PNP, SILICON;
ABCD	Q2904	121-01218	TRANSISTOR; MOSFET, N-CHANNEL;
ABCD	Q2905	121-01310A	TRANSISTOR; NPN, SILICON;
ABCD	Q2906	121-01207-01	TRANSISTOR; PNP, SILICON; POWER, 5A
ABCD	Q2906	P126-03765	HEATSINK; TRANSISTOR;
ABCD	Q2907	121-01310A	TRANSISTOR; NPN, SILICON;
ABCD	Q2914	121-01310A	TRANSISTOR; NPN, SILICON;
ABCD	Q2915	121-01310A	TRANSISTOR; NPN, SILICON;
ABCD	Q2916	121-01310A	TRANSISTOR; NPN, SILICON;
BD	Q3200	140-00505-03	TAPE; THERMAL CONDUCTIVE/ ELEC.; SELF ADHESIVE
ABCD	Q3201	121-01310A	TRANSISTOR; NPN, SILICON;
ABCD	Q3202	121-01218	TRANSISTOR; MOSFET, N-CHANNEL;

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RC	REF	PART#	DESCRIPTION
ABCD	Q3202	126-03754-P02	HEAT SINK; TRANSISTOR;
ABCD	Q3400	121-01340A	TRANSISTOR; NPN, SILICON;
ABCD	Q3401	121-01340A	TRANSISTOR; NPN, SILICON;
ABCD	Q4000	121-01310A	TRANSISTOR; NPN, SILICON;
ABCD	Q4001	121-01310A	TRANSISTOR; NPN, SILICON;
ABCD	Q4002	121-01314A	TRANSISTOR; NPN, SILICON;
ABCD	Q4003	121-01315A	TRANSISTOR; PNP, SILICON;
ABCD	Q4004	121-01190	TRANSISTOR; FIELD EFFECT, N CHANNEL; MOSFET
ABCD	Q4100	121-01310A	TRANSISTOR; NPN, SILICON;
ABCD	Q4101	121-01310A	TRANSISTOR; NPN, SILICON;
ABCD	Q4102	121-01314A	TRANSISTOR; NPN, SILICON;
ABCD	Q4103	121-01231	TRANSISTOR; MOSFET, N-CHANNEL
ABCD	Q4103	126-03754-01	HEAT SINK; TRANSISTOR;
CD	Q4801	0TR320709AA	TRANSISTOR; KTC3207,TP(KTC2482),KEC
CD	Q4802	121-01102A	TRANSISTOR; PNP, SILICON;
CD	Q4803	121-01339	TRANSISTOR; NPN, SILICON; 1200V/100MA
CD	Q4803	126-03390-01	HEATSINK; TRANSISTOR;
CD	Q4804	121-01339	TRANSISTOR; NPN, SILICON; 1200V/100MA
CD	Q4804	126-03390-01	HEATSINK; TRANSISTOR;
CD	Q4805	121-01310A	TRANSISTOR; NPN, SILICON
CD	Q4806	121-01227A	TRANSISTOR; MOSFET, N CHANNEL
ABCD	Q4903	121-01311A	TRANSISTOR; PNP, SILICON
ABCD	Q4904	121-01310A	TRANSISTOR; NPN, SILICON
ABCD	Q4905	121-01310A	TRANSISTOR; NPN, SILICON
ABCD	Q4906	121-01310A	TRANSISTOR; NPN, SILICON
ABCD	Q5101	121-01311A	TRANSISTOR; PNP, SILICON
ABCD	Q5102	121-01355A	TRANSISTOR; NPN, SILICON; 300V/500MA
ABCD	Q5121	121-01356A	TRANSISTOR; PNP, SILICON; 300V/500MA
ABCD	Q5141	121-01356A	TRANSISTOR; PNP, SILICON; 300V/500MA
ABCD	Q5161	121-01356A	TRANSISTOR; PNP, SILICON; 300V/500MA

RC	REF	PART#	DESCRIPTION
ABCD	Q6001	121-01310A	TRANSISTOR; NPN, SILICON
ABCD	Q6002	121-01310A	TRANSISTOR; NPN, SILICON
ABCD	Q6003	121-01310A	TRANSISTOR; NPN, SILICON
BD	QX3200	054-00354	NUT, MACHINE; 4-40X0.250AFX0.093THK ZN
BD	QX3200	112-01690-01	SCREW, MACHINE; 4-40 X 0.437 CD; FF
BD	QX3200	140-00505	TAPE; THERMAL CONDUCTIVE/ ELEC.
ABCD	QX3200	P121-01393	TRANSISTOR; NPN; HORIZON-TAL OUTPUT
ABCD	R0800M	063-11059-41A	RESISTOR; THICK FILM; 470 OHM 5% 1/10W
ABCD	R0801M	063-11059-60A	RESISTOR; THICK FILM; 3K OHM 5% 1/10W
ABCD	R0802M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R0803M	063-11059-65A	RESISTOR; THICK FILM; 4.7K OHM 5% 1/10W
ABCD	R0804M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R0805M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R0806M	063-11059-65A	RESISTOR; THICK FILM; 4.7K OHM 5% 1/10W
ABCD	R0807M	063-11059-60A	RESISTOR; THICK FILM; 3K OHM 5% 1/10W
ABCD	R0808M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R0811M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R0812M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R0832M	063-11059-49A	RESISTOR; THICK FILM; 1K OHM 5% 1/10W
ABCD	R1201M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R1202M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R1203M0	063-11059-43A	RESISTOR; THICK FILM; 560 OHM 5% 1/10W

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RC	REF	PART#	DESCRIPTION
ABCD	R1204M	063-11059-65A	RESISTOR; THICK FILM; 4.7K OHM 5% 1/10W
ABCD	R1205M0	063-11059-67A	RESISTOR; THICK FILM; 5.6K OHM 5% 1/10W
ABCD	R1206M0	063-11059-55A	RESISTOR; THICK FILM; 1.8K OHM 5% 1/10W
ABCD	R1207	063-11007-34	CONTROL; ROTARY, TRIMMER;
ABCD	R1208M	063-11059-57A	RESISTOR; THICK FILM; 2.2K OHM 5% 1/10W
ABCD	R1209M	063-11059-49A	RESISTOR; THICK FILM; 1K OHM 5% 1/10W
ACD	R1211	971-0016	WIRE,JUMP; TIN HDC 0.60H;
ABCD	R1212M0	063-11059-71A	RESISTOR; THICK FILM; 8.2K OHM 5% 1/10W
ABCD	R1214M0	063-11059-76A	RESISTOR; THICK FILM; 13K OHM 5% 1/10W
ABCD	R1215M0	063-11059-85A	RESISTOR; THICK FILM; 33K OHM 5% 1/10W
ABCD	R1216M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R1217M	063-11059-57A	RESISTOR; THICK FILM; 2.2K OHM 5% 1/10W
ABCD	R1218M	063-11059-33A	RESISTOR; THICK FILM; 220 OHM 5% 1/10W
ABCD	R1219M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R1220M	063-11059-17A	RESISTOR; THICK FILM; 47 OHM 5% 1/10W
ABCD	R1222M	063-11059-60A	RESISTOR; THICK FILM; 3K OHM 5% 1/10W
ABCD	R1223	063-11007-34	CONTROL; ROTARY, TRIMMER;
ABCD	R1224M0	063-11059-47A	RESISTOR; THICK FILM; 820 OHM 5% 1/10W
ABCD	R1226M	063-11059-57A	RESISTOR; THICK FILM; 2.2K OHM 5% 1/10W
ABCD	R1227M	063-11059-60A	RESISTOR; THICK FILM; 3K OHM 5% 1/10W
ABCD	R1228M	063-11059-77A	RESISTOR; THICK FILM; FF
ABCD	R1229M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R1230M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R1231M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R1232M	063-11059-97A	RESISTOR; THICK FILM; 100K OHM 5% 1/10W
ABCD	R1233M0	063-11059-95A	RESISTOR; THICK FILM; FF
ABCD	R1234M0	063-11059A	RESISTOR; THICK FILM; 0 OHM 5% 1/10W
ABCD	R1235M0	063-11059-37A	RESISTOR; THICK FILM; 330 OHM 5% 1/10W
ABCD	R1236M0	063-11059-63A	RESISTOR; THICK FILM; 3.9K OHM 5% 1/10W
ABCD	R1237M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R1238M0	063-11059-93A	RESISTOR; THICK FILM; 68K OHM 5% 1/10W
ABCD	R1239M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R1240M	063-11059-97A	RESISTOR; THICK FILM; 100K OHM 5% 1/10W
ABCD	R1241M0	063-11059-75A	RESISTOR; THICK FILM; 12K OHM 5% 1/10W
ABCD	R1244	063-10840-08B	RESISTOR; FILM; 2.2 OHM 5% 3W
ABCD	R1270M	063-11059-33A	RESISTOR; THICK FILM; 220 OHM 5% 1/10W
ABCD	R1289M	063-11059-57A	RESISTOR; THICK FILM; 2.2K OHM 5% 1/10W
ABCD	R1401M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R1402M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R1404M0	063-11244-76A	RESISTOR; THICK FILM; 61.9K OHM 1% 1/10W
ABCD	R1405M0	063-11059-63A	RESISTOR; THICK FILM; 3.9K OHM 5% 1/10W
ABCD	R1406M	063-11059-97A	RESISTOR; THICK FILM; 100K OHM 5% 1/10W
ABCD	R1407M	063-11059-60A	RESISTOR; THICK FILM; 3K OHM 5% 1/10W
ABCD	R1408M0	063-11059-61A	RESISTOR; THICK FILM; 3.3K

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RC	REF	PART#	DESCRIPTION
			OHM 5% 1/10W
ABCD	R1409M	063-11060-21A	RESISTOR; THICK FILM; 1 MEG OHM 5% 1/10W
ABCD	R1423	063-10235-80	RESISTOR; FILM; 2.2K OHM 5% 1/4W
ABCD	R1424	063-10235-80	RESISTOR; FILM; 2.2K OHM 5% 1/4W
ABCD	R1425M	063-11060-21A	RESISTOR; THICK FILM; 1 MEG OHM 5% 1/10W
ABCD	R1440M0	063-11059-81A	RESISTOR; THICK FILM; 22K OHM 5% 1/10W
ABCD	R1441M	063-11059-53A	RESISTOR; THICK FILM; 1.5K OHM 5% 1/10W
ABCD	R1442M0	063-11059-46A	RESISTOR; THICK FILM; 750 OHM 5% 1/10W
ABCD	R1443M	063-11059-49A	RESISTOR; THICK FILM; 1K OHM 5% 1/10W
ABCD	R1444M	063-11059-33A	RESISTOR; THICK FILM; 220 OHM 5% 1/10W
ABCD	R1445M	063-11059-49A	RESISTOR; THICK FILM; 1K OHM 5% 1/10W
ABCD	R1446M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R1447M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R1448M0	063-11059-81A	RESISTOR; THICK FILM; 22K OHM 5% 1/10W
ABCD	R1449M	063-11059-53A	RESISTOR; THICK FILM; 1.5K OHM 5% 1/10W
ABCD	R1450M0	063-11059-46A	RESISTOR; THICK FILM; 750 OHM 5% 1/10W
ABCD	R1451M	063-11059-49A	RESISTOR; THICK FILM; 1K OHM 5% 1/10W
ABCD	R1452M	063-11059-33A	RESISTOR; THICK FILM; 220 OHM 5% 1/10W
ABCD	R1453M	063-11059-49A	RESISTOR; THICK FILM; 1K OHM 5% 1/10W
ABCD	R1454M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R1455M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R1456M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R1457M	063-11059-97A	RESISTOR; THICK FILM; 100K OHM 5% 1/10W
ABCD	R1458M	063-11059-65A	RESISTOR; THICK FILM; 4.7K OHM 5% 1/10W
ABCD	R1459M	063-11059-65A	RESISTOR; THICK FILM; 4.7K OHM 5% 1/10W
ABCD	R2106	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
D	R2107	063-10938-11	RESISTOR; FILM; 12.7K OHM 1% 1/4W
C	R2107	063-10938-18	RESISTOR; FILM; 15K OHM 1% 1/4W
AB	R2107	063-10938-23	RESISTOR; FILM; 16.5K OHM 1% 1/4W
ABCD	R2108	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
D	R2109	063-10938-11	RESISTOR; FILM; 12.7K OHM 1% 1/4W
C	R2109	063-10938-18	RESISTOR; FILM; 15K OHM 1% 1/4W
AB	R2109	063-10938-23	RESISTOR; FILM; 16.5K OHM 1% 1/4W
ABCD	R2110	063-10236-28	RESISTOR; FILM; 220K OHM 5% 1/4W
ABCD	R2112	063-10235-56	RESISTOR; FILM; 220 OHM 5% 1/4W
ABCD	R2113	063-10235-48	RESISTOR; FILM; 100 OHM 5% 1/4W
AB	R2114	063-11168-16B	RESISTOR; FILM; 4.7 OHM 5% 5W
C	R2114	301-99282	WIRE; STRANDED, SINGLE CONDUCT; 22 GA WHITE
D	R2114	F-54164	RESISTOR ASSY; WITH SLEEVING;
AB	R2131	063-11168-16B	RESISTOR; FILM; 4.7 OHM 5% 5W
C	R2131	301-99282	WIRE; STRANDED, SINGLE CONDUCT; 22 GA WHITE
D	R2131	F-54164	RESISTOR ASSY; WITH

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COMPONENT PARTS LIST

A = H27E46DT C = H32E46DT
B = H27E46DT8 D = H36E46DT

NOTE: This list will enable you to easily determine the parts used on each Model, Chassis, or Assembly.

RC	REF	PART#	DESCRIPTION
			SLEEVING;
ABCD	R2200M	063-11059-41A	RESISTOR; THICK FILM; 470 OHM 5% 1/10W
ABCD	R2201M0	063-11059-89A	RESISTOR; THICK FILM; 47K OHM 5% 1/10W
ABCD	R2202M	063-11059-33A	RESISTOR; THICK FILM; 220 OHM 5% 1/10W
ABCD	R2203M	063-11059-33A	RESISTOR; THICK FILM; 220 OHM 5% 1/10W
ABCD	R2204M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2205M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2206M	063-11059-56A	RESISTOR; THICK FILM; 2K OHM 5% 1/10W
ABCD	R2207M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2208M0	063-11059-09A	RESISTOR; THICK FILM; FF
ABCD	R2209	063-10235-56	RESISTOR; FILM; 220 OHM 5% 1/4W
ABCD	R2210M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2211M0	063-11059-09A	RESISTOR; THICK FILM; FF
ABCD	R2212	063-10235-56	RESISTOR; FILM; 220 OHM 5% 1/4W
ABCD	R2213M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2214M0	063-11059-09A	RESISTOR; THICK FILM; FF
ABCD	R2215	063-10235-56	RESISTOR; FILM; 220 OHM 5% 1/4W
ABCD	R2217M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R2218M	063-11059-57A	RESISTOR; THICK FILM; 2.2K OHM 5% 1/10W
ABCD	R2220M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2221M0	063-11060-57A	RESISTOR; THICK FILM; 3.3M OHM 5% 1/10W
ABCD	R2222M	063-11059-53A	RESISTOR; THICK FILM; 1.5K OHM 5% 1/10W
ABCD	R2223	063-10235-72	RESISTOR; FILM; 1K OHM 5% 1/4W
ABCD	R2224M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2225M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2226M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2227M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2228M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2229M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2233M	063-11059-49A	RESISTOR; THICK FILM; 1K OHM 5% 1/10W
ABCD	R2235M0	063-11059-81A	RESISTOR; THICK FILM; 22K OHM 5% 1/10W
ABCD	R2236M	063-11059-45A	RESISTOR; THICK FILM; 680 OHM 5% 1/10W
ABCD	R2237M	063-11059-60A	RESISTOR; THICK FILM; 3K OHM 5% 1/10W
ABCD	R2238M	063-11059-45A	RESISTOR; THICK FILM; 680 OHM 5% 1/10W
ABCD	R2239M	063-11059-60A	RESISTOR; THICK FILM; 3K OHM 5% 1/10W
ABCD	R2240M	063-11059-29A	RESISTOR; THICK FILM; 150 OHM 5% 1/10W
ABCD	R2241M	063-11059-60A	RESISTOR; THICK FILM; 3K OHM 5% 1/10W
ABCD	R2242M	063-11059-29A	RESISTOR; THICK FILM; 150 OHM 5% 1/10W
ABCD	R2243M	063-11059-29A	RESISTOR; THICK FILM; 150 OHM 5% 1/10W
ABCD	R2245M0	063-11059-37A	RESISTOR; THICK FILM; 330 OHM 5% 1/10W
ABCD	R2246M0	063-11059-71A	RESISTOR; THICK FILM; 8.2K OHM 5% 1/10W
ABCD	R2247M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2248M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W

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COMPONENT PARTS LIST

A = H27E46DT C = H32E46DT
B = H27E46DT8 D = H36E46DT

NOTE: This list will enable you to easily determine the parts used on each Model, Chassis, or Assembly.

RC	REF	PART#	DESCRIPTION
ABCD	R2249M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2250M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R2251M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R2252M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2253M	063-11059-53A	RESISTOR; THICK FILM; 1.5K OHM 5% 1/10W
ABCD	R2256M	063-11059-77A	RESISTOR; THICK FILM; FF
ABCD	R2257M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2258M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2259M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2260M	063-11059-33A	RESISTOR; THICK FILM; 220 OHM 5% 1/10W
ABCD	R2261M	063-11059-57A	RESISTOR; THICK FILM; 2.2K OHM 5% 1/10W
ABCD	R2262M0	063-11059-61A	RESISTOR; THICK FILM; 3.3K OHM 5% 1/10W
ABCD	R2263M0	063-11060-09A	RESISTOR; THICK FILM; 330K OHM 5% 1/10W
ABCD	R2264M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R2265M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2266M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2267M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2268M	063-11059-29A	RESISTOR; THICK FILM; 150 OHM 5% 1/10W
ABCD	R2269M	063-11059-29A	RESISTOR; THICK FILM; 150 OHM 5% 1/10W
ABCD	R2270M	063-11059-29A	RESISTOR; THICK FILM; 150 OHM 5% 1/10W
ABCD	R2271M	063-11059-45A	RESISTOR; THICK FILM; 680 OHM 5% 1/10W
ABCD	R2272	063-10235-35	RESISTOR; FILM; 30 OHM 5% 1/4W
ABCD	R2273	063-10235-35	RESISTOR; FILM; 30 OHM 5% 1/4W
ABCD	R2274	063-10235-35	RESISTOR; FILM; 30 OHM 5% 1/4W
ABCD	R2275	063-10235-48	RESISTOR; FILM; 100 OHM 5% 1/4W
ABCD	R2276	063-10235-48	RESISTOR; FILM; 100 OHM 5% 1/4W
ABCD	R2277M	063-11059-49A	RESISTOR; THICK FILM; 1K OHM 5% 1/10W
ABCD	R2278M	063-11059-49A	RESISTOR; THICK FILM; 1K OHM 5% 1/10W
ABCD	R2279M	063-11059-49A	RESISTOR; THICK FILM; 1K OHM 5% 1/10W
ABCD	R2280M	063-11059-49A	RESISTOR; THICK FILM; 1K OHM 5% 1/10W
ABCD	R2281M0	063-11059-27A	RESISTOR; THICK FILM; 120 OHM 5% 1/10W
ABCD	R2282M0	063-11059-27A	RESISTOR; THICK FILM; 120 OHM 5% 1/10W
ABCD	R2283M0	063-11059-27A	RESISTOR; THICK FILM; 120 OHM 5% 1/10W
ABCD	R2284M0	063-11059-12A	RESISTOR; THICK FILM; 30 OHM 5% 1/10W
ABCD	R2285M0	063-11059-12A	RESISTOR; THICK FILM; 30 OHM 5% 1/10W
ABCD	R2286M0	063-11059-12A	RESISTOR; THICK FILM; 30 OHM 5% 1/10W
ABCD	R2287M0	063-11059-27A	RESISTOR; THICK FILM; 120 OHM 5% 1/10W
ABCD	R2288M0	063-11059-27A	RESISTOR; THICK FILM; 120 OHM 5% 1/10W
ABCD	R2289M0	063-11059-27A	RESISTOR; THICK FILM; 120 OHM 5% 1/10W
ABCD	R2401M0	063-11059A	RESISTOR; THICK FILM; 0 OHM 5% 1/10W
ABCD	R2402M	063-11059-49A	RESISTOR; THICK FILM; 1K OHM 5% 1/10W
ABCD	R2403M0	063-11059-81A	RESISTOR; THICK FILM; 22K

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NOTE: This list will enable you to easily determine the parts used on each Model, Chassis, or Assembly.

RC	REF	PART#	DESCRIPTION
			OHM 5% 1/10W
ABCD	R2404M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R2405M	063-11059-17A	RESISTOR; THICK FILM; 47 OHM 5% 1/10W
ABCD	R2406M0	063-11059-01A	RESISTOR; THICK FILM; 10 OHM 5% 1/10W
ABCD	R2407M	063-11059-29A	RESISTOR; THICK FILM; 150 OHM 5% 1/10W
ABCD	R2409M	063-11059-41A	RESISTOR; THICK FILM; 470 OHM 5% 1/10W
ABCD	R2410M0	063-11059A	RESISTOR; THICK FILM; 0 OHM 5% 1/10W
ABCD	R2411M	063-11059-41A	RESISTOR; THICK FILM; 470 OHM 5% 1/10W
ABCD	R2412M	063-11059-29A	RESISTOR; THICK FILM; 150 OHM 5% 1/10W
ABCD	R2413M	063-11059-41A	RESISTOR; THICK FILM; 470 OHM 5% 1/10W
ABCD	R2414M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2415M	063-11059-41A	RESISTOR; THICK FILM; 470 OHM 5% 1/10W
ABCD	R2602M0	063-11059-85A	RESISTOR; THICK FILM; 33K OHM 5% 1/10W
ABCD	R2604M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2606M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R2607M	063-11059-97A	RESISTOR; THICK FILM; 100K OHM 5% 1/10W
ABCD	R2614M0	063-11059-81A	RESISTOR; THICK FILM; 22K OHM 5% 1/10W
ABCD	R2615M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2616M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2617M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2618M0	063-11059-79A	RESISTOR; THICK FILM; 18K OHM 5% 1/10W
ABCD	R2619M0	063-11060-15A	RESISTOR; THICK FILM; 560K OHM 5% 1/10W
ABCD	R2621M0	063-11059-59A	RESISTOR; THICK FILM; 2.7K OHM 5% 1/10W
ABCD	R2623M0	063-11060-22A	RESISTOR; THICK FILM; 1 OHM 5% 1/10W
ABCD	R2624M	063-11059-49A	RESISTOR; THICK FILM; 1K OHM 5% 1/10W
ABCD	R2625M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2627M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R2631M	063-11059-60A	RESISTOR; THICK FILM; 3K OHM 5% 1/10W
ABCD	R2632M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R2633M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R2634M0	063-11059-86A	RESISTOR; THICK FILM; 36K OHM 5% 1/10W
ABCD	R2635M0	063-11059-87A	RESISTOR; THICK FILM; 39K OHM 5% 1/10W
ABCD	R2637M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2639M0	063-11059-58A	RESISTOR; THICK FILM; 2.4K OHM 5% 1/10W
ABCD	R2640M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2650M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2651M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2660M	063-11059-65A	RESISTOR; THICK FILM; 4.7K OHM 5% 1/10W
ABCD	R2662M	063-11059-33A	RESISTOR; THICK FILM; 220 OHM 5% 1/10W
ABCD	R2904	063-10235-88	RESISTOR; FILM; 4.7K OHM 5% 1/4W
ABCD	R2905	063-10235-88	RESISTOR; FILM; 4.7K OHM 5% 1/4W
ABCD	R2905M	063-11059-17A	RESISTOR; THICK FILM; 47 OHM 5% 1/10W
ABCD	R2907M	063-11059-17A	RESISTOR; THICK FILM; 47 OHM 5% 1/10W

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COMPONENT PARTS LIST

A = H27E46DT C = H32E46DT
B = H27E46DT8 D = H36E46DT

NOTE: This list will enable you to easily determine the parts used on each Model, Chassis, or Assembly.

RC	REF	PART#	DESCRIPTION
ABCD	R2908M	063-11059-17A	RESISTOR; THICK FILM; 47 OHM 5% 1/10W
ABCD	R2910M	063-11059-97A	RESISTOR; THICK FILM; 100K OHM 5% 1/10W
ABCD	R2911M	063-11059-17A	RESISTOR; THICK FILM; 47 OHM 5% 1/10W
ABCD	R2912	063-10236-44	RESISTOR; FILM; 1M OHM 5% 1/4W
ABCD	R2913	063-10236-20	RESISTOR; FILM; 100K OHM 5% 1/4W
ABCD	R2913M	063-11059-97A	RESISTOR; THICK FILM; 100K OHM 5% 1/10W
ABCD	R2914	063-10235-88	RESISTOR; FILM; 4.7K OHM 5% 1/4W
ABCD	R2914	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R2915	063-10235-88	RESISTOR; FILM; 4.7K OHM 5% 1/4W
ABCD	R2915M	063-11059-97A	RESISTOR; THICK FILM; 100K OHM 5% 1/10W
ABCD	R2916	063-10235-88	RESISTOR; FILM; 4.7K OHM 5% 1/4W
ABCD	R2917	063-10235-88	RESISTOR; FILM; 4.7K OHM 5% 1/4W
ABCD	R2917M	063-11059-97A	RESISTOR; THICK FILM; 100K OHM 5% 1/10W
ABCD	R2918	063-10235-88	RESISTOR; FILM; 4.7K OHM 5% 1/4W
ABCD	R2918	063-10236-20	RESISTOR; FILM; 100K OHM 5% 1/4W
ABCD	R2919	063-10236-08	RESISTOR; FILM; 33K OHM 5% 1/4W
ABCD	R2919M	063-11059-97A	RESISTOR; THICK FILM; 100K OHM 5% 1/10W
ABCD	R2920	063-10235-88	RESISTOR; FILM; 4.7K OHM 5% 1/4W
ABCD	R2920	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R2921	063-10235-88	RESISTOR; FILM; 4.7K OHM 5% 1/4W
ABCD	R2921	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R2922	063-10235-82	RESISTOR; FILM; 2.7K OHM 5% 1/4W
ABCD	R2922	063-10235-88	RESISTOR; FILM; 4.7K OHM 5% 1/4W
ABCD	R2923	063-10235-82	RESISTOR; FILM; 2.7K OHM 5% 1/4W
ABCD	R2923M	063-11059-97A	RESISTOR; THICK FILM; 100K OHM 5% 1/10W
ABCD	R2924	063-10235-88	RESISTOR; FILM; 4.7K OHM 5% 1/4W
ABCD	R2924	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R2924	063-10236-20	RESISTOR; FILM; 100K OHM 5% 1/4W
ABCD	R2925	063-10236-12	RESISTOR; FILM; 47K OHM 5% 1/4W
ABCD	R2925M	063-11059-97A	RESISTOR; THICK FILM; 100K OHM 5% 1/10W
ABCD	R2926	063-10235-88	RESISTOR; FILM; 4.7K OHM 5% 1/4W
ABCD	R2927M	063-11059-97A	RESISTOR; THICK FILM; 100K OHM 5% 1/10W
ABCD	R2930	063-11088-40	RESISTOR; FILM; 680K OHM 5% 1/2W
ABCD	R2932	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R2933	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R2934	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R2935	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R2936	063-10235-88	RESISTOR; FILM; 4.7K OHM 5% 1/4W
ABCD	R2936M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R2937	063-10235-72	RESISTOR; FILM; 1K OHM 5% 1/4W
ABCD	R2937M	063-11059-33A	RESISTOR; THICK FILM; 220 OHM 5% 1/10W
ABCD	R2938	063-10235-82	RESISTOR; FILM; 2.7K OHM 5% 1/4W

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COMPONENT PARTS LIST

A = H27E46DT C = H32E46DT
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RC	REF	PART#	DESCRIPTION
ABCD	R2938M0	063-11059-51A	RESISTOR; THICK FILM; 1.2K OHM 5% 1/10W
ABCD	R2939	063-10235-98	RESISTOR; FILM; 12K OHM 5% 1/4W
ABCD	R2940	063-10235-94	RESISTOR; FILM; 8.2K OHM 5% 1/4W
ABCD	R2941	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R2942	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R2943	063-10236-20	RESISTOR; FILM; 100K OHM 5% 1/4W
ABCD	R2943M R2946M	063-11059-41A	RESISTOR; THICK FILM; 470 OHM 5% 1/10W
ABCD	R2944	063-10235-58	RESISTOR; FILM; 270 OHM 5% 1/4W
ABCD	R2944	063-10235-72	RESISTOR; FILM; 1K OHM 5% 1/4W
ABCD	R2945	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R2945M	063-11059-22A	RESISTOR; THICK FILM; 75 OHM 5% 1/10W
ABCD	R2947	063-10235-58	RESISTOR; FILM; 270 OHM 5% 1/4W
ABCD	R2948M	063-11059-22A	RESISTOR; THICK FILM; 75 OHM 5% 1/10W
CD	R2950	063-10235-72	RESISTOR; FILM; 1K OHM 5% 1/4W
AB	R2950	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R2951	063-10235-56	RESISTOR; FILM; 220 OHM 5% 1/4W
ABCD	R2952	063-10854-06	CONTROL; ROTARY, TRIMMER;
ABCD	R2953	063-10235-72	RESISTOR; FILM; 1K OHM 5% 1/4W
ABCD	R2953M	063-11059-22A	RESISTOR; THICK FILM; 75 OHM 5% 1/10W
ABCD	R2954	063-10235-48	RESISTOR; FILM; 100 OHM 5% 1/4W
ABCD	R2955	063-10235-72	RESISTOR; FILM; 1K OHM 5% 1/4W
ABCD	R2955M	063-11059-22A	RESISTOR; THICK FILM; 75 OHM 5% 1/10W
ABCD	R2956	063-10236-68	RESISTOR; FILM; 10M OHM 5% 1/4W
ABCD	R2957M	063-11059-22A	RESISTOR; THICK FILM; 75 OHM 5% 1/10W
ABCD	R2959M	063-11059-22A	RESISTOR; THICK FILM; 75 OHM 5% 1/10W
ABCD	R2960	063-10235-78	RESISTOR; FILM; 1.8K OHM 5% 1/4W
ABCD	R2961	063-10235-94	RESISTOR; FILM; 8.2K OHM 5% 1/4W
ABCD	R2962	063-10236	RESISTOR; FILM; 15K OHM 5% 1/4W
ABCD	R2963	063-10235-64	RESISTOR; FILM; 470 OHM 5% 1/4W
ABCD	R2964	063-10235-64	RESISTOR; FILM; 470 OHM 5% 1/4W
ABCD	R2965	063-10236-10	RESISTOR; FILM; 39K OHM 5% 1/4W
ABCD	R2966M	063-11059-41A	RESISTOR; THICK FILM; 470 OHM 5% 1/10W
ABCD	R2969M	063-11059-41A	RESISTOR; THICK FILM; 470 OHM 5% 1/10W
ABCD	R2972M	063-11059-41A	RESISTOR; THICK FILM; 470 OHM 5% 1/10W
ABCD	R2973M	063-11059-22A	RESISTOR; THICK FILM; 75 OHM 5% 1/10W
ABCD	R2974M	063-11059-17A	RESISTOR; THICK FILM; 47 OHM 5% 1/10W
ABCD	R2975M	063-11059-22A	RESISTOR; THICK FILM; 75 OHM 5% 1/10W
ABCD	R2976M	063-11059-17A	RESISTOR; THICK FILM; 47 OHM 5% 1/10W
ABCD	R2977M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R2978M0	063-11059-75A	RESISTOR; THICK FILM; 12K OHM 5% 1/10W
ABCD	R3200	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W

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COMPONENT PARTS LIST

A = H27E46DT C = H32E46DT
B = H27E46DT8 D = H36E46DT

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RC	REF	PART#	DESCRIPTION
ABCD	R3201	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R3202	063-10235-82	RESISTOR; FILM; 2.7K OHM 5% 1/4W
ABCD	R3203	063-11088-20	RESISTOR; FILM; 100K OHM 5% 1/2W
CD	R3204	063-10243-54	RESISTOR; FILM; 180 OHM 5% 1/2W
C	R3208	063-10235-98	RESISTOR; FILM; 12K OHM 5% 1/4W
D	R3208	063-10236-09	RESISTOR; FILM; 36K OHM 5% 1/4W
D	R3209	063-10235-84	RESISTOR; FILM; 3.3K OHM 5% 1/4 W
ABC	R3209	063-11087-85	RESISTOR; FILM;
ABCD	R3210	063-11087-62	RESISTOR; FILM; FF
ABCD	R3212	063-11087-72	RESISTOR; FILM; FF
ABCD	R3213	063-10236-23	RESISTOR; FILM; 130K OHM 5% 1/4W
ABCD	R3220	063-11088-20	RESISTOR; FILM; 100K OHM 5% 1/2W
ABCD	R3221	063-10235-72	RESISTOR; FILM; 1K OHM 5% 1/4W
ABCD	R3222	063-10938-64	RESISTOR; FILM; 37.4K OHM 1% 1/4 W
ABCD	R3415	063-10235-88	RESISTOR; FILM; 4.7K OHM 5% 1/4W
ABCD	R3416	063-10235-88	RESISTOR; FILM; 4.7K OHM 5% 1/4W
ABCD	R3454	063-10235-72	RESISTOR; FILM; 1K OHM 5% 1/4W
ABCD	R4	063-10235-88	RESISTOR; FILM; 4.7K OHM 5% 1/4W
ABCD	R4	063-11059-81A	RESISTOR; THICK FILM; 22K OHM 5% 1/10W
ABCD	R4000	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R4001	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R4002	063-10235-72	RESISTOR; FILM; 1K OHM 5% 1/4W
ABCD	R4003	063-10235-56	RESISTOR; FILM; 220 OHM 5% 1/4W
ABCD	R4004	063-11087-64	RESISTOR; FILM; FF
ABCD	R4005	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R4008	063-10235-48	RESISTOR; FILM; 100 OHM 5% 1/4W
ABCD	R4009	063-10235-79	RESISTOR; FILM; 2K OHM 5% 1/4W
ABCD	R4011	063-11087-72	RESISTOR; FILM; FF
ABCD	R4013	063-11087-38	RESISTOR; FILM; 39 OHM 5% 1/2W
ABCD	R4014	063-11087-38	RESISTOR; FILM; 39 OHM 5% 1/2W
ABCD	R4015	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R4100	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R4101	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
D	R4102	063-10235-93	RESISTOR; FILM; 7.5K OHM 5% 1/4W
ABC	R4102	063-10235-94	RESISTOR; FILM; 8.2K OHM 5% 1/4W
ABCD	R4103	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R4104	063-10940-75	RESISTOR; FILM; 464K OHM 1% 1/4W
ABCD	R4105	063-10236-36	RESISTOR; FILM; 470K OHM 5% 1/4W
ABCD	R4106	063-10236-20	RESISTOR; FILM; 100K OHM 5% 1/4W
ABCD	R4108	063-10938-64	RESISTOR; FILM; 37.4K OHM 1% 1/4 W
ABCD	R4109	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R4110	063-10236-15	RESISTOR; FILM; 62K OHM 5% 1/4W
ABC	R4111	063-10236-12	RESISTOR; FILM; 47K OHM 5% 1/4W
D	R4111	971-0016	WIRE,JUMP; TIN HDC 0.60H;

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COMPONENT PARTS LIST

A = H27E46DT C = H32E46DT
B = H27E46DT8 D = H36E46DT

NOTE: This list will enable you to easily determine the parts used on each Model, Chassis, or Assembly.

RC	REF	PART#	DESCRIPTION
ABCD	R4112	063-10236-44	RESISTOR; FILM; 1M OHM 5% 1/4W
ABD	R4113	063-10235-98	RESISTOR; FILM; 12K OHM 5% 1/4W
C	R4113	063-10235-99	RESISTOR; FILM; 13K OHM 5% 1/4W
ABCD	R4114	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R4115	063-10235-72	RESISTOR; FILM; 1K OHM 5% 1/4W
ABCD	R4116	063-10236-44	RESISTOR; FILM; 1M OHM 5% 1/4W
ABCD	R4117	063-10236-20	RESISTOR; FILM; 100K OHM 5% 1/4W
ABCD	R4118	063-10235-82	RESISTOR; FILM; 2.7K OHM 5% 1/4W
ABCD	R4119	063-10235-64	RESISTOR; FILM; 470 OHM 5% 1/4W
ABCD	R4120	063-10936-83	RESISTOR; FILM; 5.36K OHM 1% 1/4W
ABCD	R4122	063-10235-40	RESISTOR; FILM; 47 OHM 5% 1/4W
ABCD	R4124	063-11087-60	RESISTOR; FILM; 330 OHM 5% 1/2W
ABCD	R4125	063-10235-58	RESISTOR; FILM; 270 OHM 5% 1/4W
ABCD	R4130	063-10235-48	RESISTOR; FILM; 100 OHM 5% 1/4W
AB	R4131	063-10236-39	RESISTOR; FILM; 620K OHM 5% 1/4W
CD	R4131	063-10236-41	RESISTOR; FILM; 750K OHM 5% 1/4W
ABCD	R4131	063-10559-10	RESISTOR; FILM; 2.7 OHM 5% 1/4W
ABCD	R4132	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R4133	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R4134	063-10236-04	RESISTOR; FILM; 22K OHM 5% 1/4W
ABCD	R4135	063-10236-20	RESISTOR; FILM; 100K OHM 5% 1/4W
ABCD	R4136	063-10236-04	RESISTOR; FILM; 22K OHM 5% 1/4W
ABCD	R4137	063-10236-20	RESISTOR; FILM; 100K OHM 5% 1/4W
CD	R4801	063-10235-48	RESISTOR; FILM; 100 OHM 5% 1/4W
CD	R4802	063-10235-72	RESISTOR; FILM; 1K OHM 5% 1/4W
CD	R4803	063-10235-72	RESISTOR; FILM; 1K OHM 5% 1/4W
CD	R4804	063-10235-88	RESISTOR; FILM; 4.7K OHM 5% 1/4W
CD	R4805	063-10235-88	RESISTOR; FILM; 4.7K OHM 5% 1/4W
CD	R4806	063-10235-48	RESISTOR; FILM; 100 OHM 5% 1/4W
CD	R4809	063-10235-48	RESISTOR; FILM; 100 OHM 5% 1/4W
CD	R4810	063-10235-48	RESISTOR; FILM; 100 OHM 5% 1/4W
CD	R4813	063-10235-86	RESISTOR; FILM; 3.9K OHM 5% 1/4W
CD	R4814	063-11087-74	RESISTOR; FILM; 1.2K OHM 5% 1/2W
CD	R4821	063-10236-04	RESISTOR; FILM; 22K OHM 5% 1/4W
CD	R4824	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
CD	R4825	063-10236-32	RESISTOR; FILM; 330K OHM 5% 1/4W
CD	R4826	063-11007-34	CONTROL; ROTARY, TRIMMER;
CD	R4828	063-10235-72	RESISTOR; FILM; 1K OHM 5% 1/4W
CD	R4830	063-10235-64	RESISTOR; FILM; 470 OHM 5% 1/4W
CD	R4831	063-11007-03	CONTROL; ROTARY, TRIMMER; FF
CD	R4832	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
CD	R4833	063-10235-96	RESISTOR; FILM; 10K OHM 5%

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COMPONENT PARTS LIST

A = H27E46DT C = H32E46DT
B = H27E46DT8 D = H36E46DT

NOTE: This list will enable you to easily determine the parts used on each Model, Chassis, or Assembly.

RC	REF	PART#	DESCRIPTION
			1/4W
CD	R4834	063-10235-80	RESISTOR; FILM; 2.2K OHM 5% 1/4W
CD	R4835	063-10235-88	RESISTOR; FILM; 4.7K OHM 5% 1/4W
CD	R4836	063-10235-72	RESISTOR; FILM; 1K OHM 5% 1/4W
ABCD	R4982	063-10236-36	RESISTOR; FILM; 470K OHM 5% 1/4W
ABCD	R4983	063-10236-44	RESISTOR; FILM; 1M OHM 5% 1/4W
ABCD	R4984	063-10235-72	RESISTOR; FILM; 1K OHM 5% 1/4W
ABCD	R4985M	063-11059-41A	RESISTOR; THICK FILM; 470 OHM 5% 1/10W
ABCD	R4986M0	063-11059-81A	RESISTOR; THICK FILM; 22K OHM 5% 1/10W
ABCD	R4987	063-10235-84	RESISTOR; FILM; 3.3K OHM 5% 1/4 W
ABCD	R4989M	063-11059-33A	RESISTOR; THICK FILM; 220 OHM 5% 1/10W
ABCD	R4990	063-10235-88	RESISTOR; FILM; 4.7K OHM 5% 1/4W
ABCD	R4992	063-10235-56	RESISTOR; FILM; 220 OHM 5% 1/4W
ABCD	R4993	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	R4995M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R4996	063-10235-64	RESISTOR; FILM; 470 OHM 5% 1/4W
ABCD	R4997	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
C	R5100	063-11272	RESISTOR; HIGH VOLTAGE; FF
ABCD	R5101	063-10235-92	RESISTOR; FILM; 6.8K OHM 5% 1/4W
ABCD	R5102	063-10235-81	RESISTOR; FILM; 2.4K OHM 5% 1/4W
ABCD	R5103	063-10243-72	RESISTOR; FILM; FF
ABCD	R5121	063-10235-48	RESISTOR; FILM; 100 OHM 5% 1/4W
ABCD	R5122M	063-11059-49A	RESISTOR; THICK FILM; 1K OHM 5% 1/10W
ABCD	R5123M	063-11059-47A	RESISTOR; THICK FILM; 820 OHM 5% 1/10W
ABCD	R5125	063-11165-06B	RESISTOR; FILM; 27K OHM 5% 3W
ABCD	R5126	063-11156-40B	RESISTOR; FILM; 47 OHM 5% 1W
ABCD	R5127	063-10243-72	RESISTOR; FILM; FF
ABCD	R5128	063-11087-64	RESISTOR; FILM; FF
ABCD	R5130	063-10235-72	RESISTOR; FILM; 1K OHM 5% 1/4W
ABCD	R5131	063-10235-80	RESISTOR; FILM; 2.2K OHM 5% 1/4W
ABCD	R5132	063-10235-65	RESISTOR; FILM; 510 OHM 5% 1/4W
ABCD	R5141	063-10235-48	RESISTOR; FILM; 100 OHM 5% 1/4W
ABCD	R5142M	063-11059-49A	RESISTOR; THICK FILM; 1K OHM 5% 1/10W
ABCD	R5143M	063-11059-47A	RESISTOR; THICK FILM; 820 OHM 5% 1/10W
ABCD	R5145	063-11165-06B	RESISTOR; FILM; 27K OHM 5% 3W
ABCD	R5146	063-11156-40B	RESISTOR; FILM; 47 OHM 5% 1W
ABCD	R5147	063-10243-72	RESISTOR; FILM; FF
ABCD	R5148	063-11087-64	RESISTOR; FILM; FF
ABCD	R5161	063-10235-48	RESISTOR; FILM; 100 OHM 5% 1/4W
ABCD	R5162M	063-11059-49A	RESISTOR; THICK FILM; 1K OHM 5% 1/10W
ABCD	R5163M	063-11059-47A	RESISTOR; THICK FILM; 820 OHM 5% 1/10W
ABCD	R5165	063-11165-06B	RESISTOR; FILM; 27K OHM 5% 3W
ABCD	R5166	063-11156-40B	RESISTOR; FILM; 47 OHM 5% 1W
ABCD	R5167	063-10243-72	RESISTOR; FILM; FF
ABCD	R5168	063-11087-64	RESISTOR; FILM; FF
ABCD	R5169	063-10235-40	RESISTOR; FILM; 47 OHM 5%

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RC	REF	PART#	DESCRIPTION
			1/4W
ABCD	R5170	063-10235-40	RESISTOR; FILM; 47 OHM 5% 1/4W
ABCD	R5171	063-10235-40	RESISTOR; FILM; 47 OHM 5% 1/4W
ABCD	R5172	063-10243-72	RESISTOR; FILM; FF
ABCD	R5173	063-10236-36	RESISTOR; FILM; 470K OHM 5% 1/4W
ABCD	R5174	063-11088-20	RESISTOR; FILM; 100K OHM 5% 1/2W
ABCD	R5175	063-10235-72	RESISTOR; FILM; 1K OHM 5% 1/4W
ABCD	R5176M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R5177M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R6000M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R6001M	063-11059-57A	RESISTOR; THICK FILM; 2.2K OHM 5% 1/10W
ABCD	R6002M	063-11059-57A	RESISTOR; THICK FILM; 2.2K OHM 5% 1/10W
ABCD	R6003M	063-11059-65A	RESISTOR; THICK FILM; 4.7K OHM 5% 1/10W
ABCD	R6004M	063-11059-57A	RESISTOR; THICK FILM; 2.2K OHM 5% 1/10W
ABCD	R6005M	063-11059-65A	RESISTOR; THICK FILM; 4.7K OHM 5% 1/10W
ABCD	R6006M0	063-11059-31A	RESISTOR; THICK FILM; 180 OHM 5% 1/10W
ABCD	R6007M	063-11059-65A	RESISTOR; THICK FILM; 4.7K OHM 5% 1/10W
ABCD	R6008M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R6009M	063-11059-49A	RESISTOR; THICK FILM; 1K OHM 5% 1/10W
ABCD	R6012M0	063-11059-87A	RESISTOR; THICK FILM; 39K OHM 5% 1/10W
ABCD	R6013M	063-11059-57A	RESISTOR; THICK FILM; 2.2K OHM 5% 1/10W
ABCD	R6015M	063-11059-49A	RESISTOR; THICK FILM; 1K

RC	REF	PART#	DESCRIPTION
			OHM 5% 1/10W
ABCD	R6016M	063-11059-49A	RESISTOR; THICK FILM; 1K OHM 5% 1/10W
ABCD	R6018M	063-11059-49A	RESISTOR; THICK FILM; 1K OHM 5% 1/10W
ABCD	R6021M	063-11059-33A	RESISTOR; THICK FILM; 220 OHM 5% 1/10W
ABCD	R6022M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R6023M	063-11059-65A	RESISTOR; THICK FILM; 4.7K OHM 5% 1/10W
ABCD	R6024M0	063-11059-31A	RESISTOR; THICK FILM; 180 OHM 5% 1/10W
ABCD	R6025M	063-11059-49A	RESISTOR; THICK FILM; 1K OHM 5% 1/10W
ABCD	R6026M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R6027	063-10235-80	RESISTOR; FILM; 2.2K OHM 5% 1/4W
ACD	R6030	971-0016	WIRE,JUMP; TIN HDC 0.60H;
ABCD	R6031M	063-11059-49A	RESISTOR; THICK FILM; 1K OHM 5% 1/10W
ABCD	R6032M	063-11059-77A	RESISTOR; THICK FILM; FF
ABCD	R6033M0	063-11059A	RESISTOR; THICK FILM; 0 OHM 5% 1/10W
ABCD	R6034M	063-11060-21A	RESISTOR; THICK FILM; 1 MEG OHM 5% 1/10W
ABCD	R6035M	063-11060-21A	RESISTOR; THICK FILM; 1 MEG OHM 5% 1/10W
ABCD	R6036M	063-11059-65A	RESISTOR; THICK FILM; 4.7K OHM 5% 1/10W
ABCD	R6037M0	063-11059-83A	RESISTOR; THICK FILM; 27K OHM 5% 1/10W
ABCD	R6039M	063-11059-33A	RESISTOR; THICK FILM; 220 OHM 5% 1/10W
ABCD	R6040M	063-11059-49A	RESISTOR; THICK FILM; 1K OHM 5% 1/10W
ABCD	R6041M	063-11059-33A	RESISTOR; THICK FILM; 220 OHM 5% 1/10W
ABCD	R6042M	063-11059-33A	RESISTOR; THICK FILM; 220 OHM 5% 1/10W

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RC	REF	PART#	DESCRIPTION
ABCD	R6043M	063-11059-33A	RESISTOR; THICK FILM; 220 OHM 5% 1/10W
ABCD	R6044M	063-11059-33A	RESISTOR; THICK FILM; 220 OHM 5% 1/10W
ABCD	R6045M	063-11059-65A	RESISTOR; THICK FILM; 4.7K OHM 5% 1/10W
ABCD	R6046M	063-11059-65A	RESISTOR; THICK FILM; 4.7K OHM 5% 1/10W
ABCD	R6047M	063-11059-65A	RESISTOR; THICK FILM; 4.7K OHM 5% 1/10W
ABCD	R6048M	063-11059-65A	RESISTOR; THICK FILM; 4.7K OHM 5% 1/10W
ABCD	R6049M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R6050M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R6055M	063-11059-65A	RESISTOR; THICK FILM; 4.7K OHM 5% 1/10W
ABCD	R6061M0	063-11060-13A	RESISTOR; THICK FILM; FF
ABCD	R6069M0	063-11060-13A	RESISTOR; THICK FILM; FF
ABCD	R6070M0	063-11060-13A	RESISTOR; THICK FILM; FF
ABCD	R6072M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R6073M0	063-11059-61A	RESISTOR; THICK FILM; 3.3K OHM 5% 1/10W
ABCD	R6074M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R6075M0	063-11059-69A	RESISTOR; THICK FILM; 6.8K OHM 5% 1/10W
ABCD	R6076M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R6077M	063-11059-97A	RESISTOR; THICK FILM; 100K OHM 5% 1/10W
ABCD	R6078M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R6080M	063-11060-21A	RESISTOR; THICK FILM; 1 MEG OHM 5% 1/10W
ABCD	R6081M	063-11059-49A	RESISTOR; THICK FILM; 1K OHM 5% 1/10W
ABCD	R6088M	063-11059-65A	RESISTOR; THICK FILM; 4.7K OHM 5% 1/10W

RC	REF	PART#	DESCRIPTION
ABCD	R6090	063-10235-56	RESISTOR; FILM; 220 OHM 5% 1/4W
ABCD	R6091M	063-11059-73A	RESISTOR; THICK FILM; 10K OHM 5% 1/10W
ABCD	R6098M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R6099M	063-11059-25A	RESISTOR; THICK FILM; 100 OHM 5% 1/10W
ABCD	R809	063-10235-08	RESISTOR; FILM; 2.2 OHM 5% 1/4W
ABCD	R810	063-10235-08	RESISTOR; FILM; 2.2 OHM 5% 1/4W
ABCD	RGB0001	058-00661	PLUG; MULTI-PRONG, RIGHT ANGLE; 11 POSITION, NATURAL
ABC	RX2102	063-11087-61	RESISTOR; FILM;
D	RX2102	063-11087-67	RESISTOR; FILM; 620 OHM 5% 1/2W
ABCD	RX2103	063-11156-11B	RESISTOR; FILM; 3 OHM 5% 1W
ABCD	RX2104	063-11156-11B	RESISTOR; FILM; 3 OHM 5% 1W
ABCD	RX2105	063-11087-08	RESISTOR; FILM;
ABC	RX2120	063-11087-61	RESISTOR; FILM;
D	RX2120	063-11087-67	RESISTOR; FILM; 620 OHM 5% 1/2W
ABCD	RX2121	971-0016	WIRE,JUMP; TIN HDC 0.60H;
ABCD	RX2122	971-0016	WIRE,JUMP; TIN HDC 0.60H;
ABCD	RX2900	063-10235-96	RESISTOR; FILM; 10K OHM 5% 1/4W
ABCD	RX2902	063-10235-80	RESISTOR; FILM; 2.2K OHM 5% 1/4W
ABCD	RX2903	063-10559-24	RESISTOR; FILM; 10 OHM 5% 1/4W
ABCD	RX2910	063-10559-48	RESISTOR; FILM; 100 OHM 5% 1/4W
ABCD	RX2926	063-10559-24	RESISTOR; FILM; 10 OHM 5% 1/4W
ABCD	RX2928	063-10559-24	RESISTOR; FILM; 10 OHM 5% 1/4W
ABCD	RX2929	063-11156-80B	RESISTOR; FILM; 2.2K OHM 5%

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RC	REF	PART#	DESCRIPTION
			1W
AB	RX3208	063-10559	RESISTOR; FILM; 1 OHM 5% 1/4W
CD	RX3208	063-10559-24	RESISTOR; FILM; 10 OHM 5% 1/4W
ABCD	RX3213	063-10559-48	RESISTOR; FILM; 100 OHM 5% 1/4W
AB	RX3214	063-10940-09	RESISTOR; FILM; 121K OHM 1% 1/4W
CD	RX3214	063-10940-12	RESISTOR; FILM; 130K OHM 1% 1/4W
ABC	RX3215	063-10236-56	RESISTOR; FILM; 3.3M OHM 5% 1/4W
ABCD	RX3216	063-10938	RESISTOR; FILM; 10K OHM 1% 1/4W
ABCD	RX3400	063-11182	RESISTOR; CARBON COMPOSITION; 5.6M OHM 20% 1/2W
ABCD	RX3401	063-10930-04	RESISTOR; THERMISTOR;
ABCD	RX3402	063-11157-16B	RESISTOR; FILM; 68K OHM 5% 1W
ABCD	RX3403	063-11235-P11	RESISTOR; FILM; 0.068 OHM 10% 3W
ABCD	RX3404	063-10235-84	RESISTOR; FILM; 3.3K OHM 5% 1/4 W
ABCD	RX3405	063-10235-68	RESISTOR; FILM; 680 OHM 5% 1/4W
ABCD	RX3406	063-10235-74	RESISTOR; FILM; 1.2K OHM 5% 1/4W
ABCD	RX3407	063-10235-24	RESISTOR; FILM; 10 OHM 5% 1/4W
CD	RX3408	063-10936-08	RESISTOR; FILM; 1.2 K OHM 1% 1/4W
AB	RX3408	063-10936-20	RESISTOR; FILM; 1.58K OHM 1% 1/4W
ABCD	RX3409	063-10235-78	RESISTOR; FILM; 1.8K OHM 5% 1/4W
ABCD	RX3411	063-11160-68B	RESISTOR; FILM; 680 OHM 5% 2W
ABCD	RX3413	063-10244-36	RESISTOR; FILM; 470K OHM 5% 1/2W
ABCD	RX3418	063-10559	RESISTOR; FILM; 1 OHM 5% 1/4W
ABCD	RX3424	063-11168-92B	RESISTOR; FILM; 6.8K OHM 5% 5W
ABCD	RX3427	063-10235-42	RESISTOR; FILM; 56 OHM 5% 1/4W
AB	RX3431	063-10710A	RESISTOR; THERMISTOR;
CD	RX3431	063-11119	RESISTOR; THERMISTOR; DEGAUSSER
ABCD	RX3433	063-10236-36	RESISTOR; FILM; 470K OHM 5% 1/4W
ABCD	RX3436	136-00167-11A	FUSE; TIME DELAY; 4 AMP 125V
ABCD	RX3437	063-10244-36	RESISTOR; FILM; 470K OHM 5% 1/2W
ABCD	RX3438	063-10235-84	RESISTOR; FILM; 3.3K OHM 5% 1/4 W
ABCD	RX3439	063-11105-02	RESISTOR; FUSING; 0.1 OHM 5% 1/4W
ABCD	RX3440	063-11157-16B	RESISTOR; FILM; 68K OHM 5% 1W
ABCD	RX3441	063-11156B	RESISTOR; FILM; 1 OHM 5% 1W
ABCD	RX3442	063-10235-68	RESISTOR; FILM; 680 OHM 5% 1/4W
ABCD	RX3443	063-10235-80	RESISTOR; FILM; 2.2K OHM 5% 1/4W
ABCD	RX3444	063-10235-24	RESISTOR; FILM; 10 OHM 5% 1/4W
ABCD	RX3445	063-10235-64	RESISTOR; FILM; 470 OHM 5% 1/4W
ABCD	RX3446	063-10235-72	RESISTOR; FILM; 1K OHM 5% 1/4W
ABCD	RX3447	063-10936-38	RESISTOR; FILM; 2.26K OHM 1% 1/4W
ABCD	RX3448	063-10936-01	RESISTOR; FILM; 1.02K OHM 1% 1/4W
ABCD	RX3450	063-11161-20B	RESISTOR; FILM; 100K OHM 5% 2W
ABCD	RX3451	063-11214	RESISTOR; FILM; 0.1 OHM 5% 1/2W
ABCD	RX3452	063-10944	RESISTOR; FILM; 100 OHM 1%

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COMPONENT PARTS LIST

A = H27E46DT C = H32E46DT
B = H27E46DT8 D = H36E46DT

NOTE: This list will enable you to easily determine the parts used on each Model, Chassis, or Assembly.

RC	REF	PART#	DESCRIPTION
			1/2W
ABCD	RX3453	063-10932-37	RESISTOR; FILM; 22.1 OHM 1% 1/4W
ABCD	RX4006	063-10559-24	RESISTOR; FILM; 10 OHM 5% 1/4W
ABCD	RX4007	063-10559-24	RESISTOR; FILM; 10 OHM 5% 1/4W
ABCD	RX4010	063-10565	RESISTOR; FILM; 1 OHM 5% 1/ 2W
ABCD	RX4012	063-11197-26	RESISTOR; WIREWOUND; 1.2 OHM 5% 5W
ABCD	RX4121	063-10559-24	RESISTOR; FILM; 10 OHM 5% 1/4W
ABCD	RX4123	063-10235-26	RESISTOR; FILM; 12 OHM 5% 1/4W
ABCD	RX4126	063-10559-44	RESISTOR; FILM; 68 OHM 5% 1/4W
ABCD	RX4127	063-10840-64B	RESISTOR; FILM; 470 OHM 5% 3W
AB	RX4128	063-10450-13	RESISTOR; WIREWOUND; 5.1K OHM 5% 7W
CD	RX4128	063-10840-96B	RESISTOR; FILM; 10K OHM 5% 3W
CD	RX4807	063-10841-20	RESISTOR; FILM; 100K OHM 5% 3W
AB	RX4807	063-11165-20B	RESISTOR; FILM; 100K OHM 5% 3W
AB	RX4808	063-11165-20B	RESISTOR; FILM; 100K OHM 5% 3W
CD	RX4811	063-11161-20B	RESISTOR; FILM; 100K OHM 5% 2W
CD	RX4812	063-11161-20B	RESISTOR; FILM; 100K OHM 5% 2W
D	RX4817	020-04462-20A	COIL; 47 MICROHENRY; RCF, FIXED
C	RX4817	063-10559-48	RESISTOR; FILM; 100 OHM 5% 1/4W
D	RX4818	020-04462-20A	COIL; 47 MICROHENRY; RCF, FIXED
C	RX4818	063-10559-48	RESISTOR; FILM; 100 OHM 5% 1/4W

RC	REF	PART#	DESCRIPTION
C	RX4820	063-11156-80B	RESISTOR; FILM; 2.2K OHM 5% 1W
D	RX4820	063-11164-80B	RESISTOR; FILM; 2.2K OHM 5% 3W
ABCD	RX4827	063-11156-24B	RESISTOR; FILM; 10 OHM 5% 1W
ABCD	RX4840	063-11156-24B	RESISTOR; FILM; 10 OHM 5% 1W
AB	RX4841	063-11165-20B	RESISTOR; FILM; 100K OHM 5% 3W
ABCD	SETUP0000		058-00479-02A CONNECTOR; 2 PIN; DOUBLE ROW
ABCD	SW1	085-01691	SWITCH; PUSH-BUTTON, NON LOCKING; SPST
D	T3201	P095-04646-01	TRANSFORMER; HORIZONTAL SWEEP, DUAL D; 36V MMI (6174Z-6035B
ABC	T3201	P095-04646A	TRANSFORMER; HORIZONTAL SWEEP; 32V MMI (6174Z-6035A
ABCD	T4000	095-04474	TRANSFORMER; HORIZONTAL DRIVER;
ABCD	TX2900	P095-04645	TRANSFORMER; HIGH VOLTAGE BOOST;
ABCD	TX3400	095-04579	TRANSFORMER; CHOPPER;
ABCD	TX3401	095-04589	TRANSFORMER; STANDBY CHOPPER;
ABCD	U1201	224-00148	SAW FILTER; DUAL CHANNEL;
ABCD	U1202	224-00202A	FILTER; CERAMIC, 4.5 MHZ;
ABCD	U1203	224-00023A	CERAMIC FILTER; 4.5 MHZ TRAP;
ABCD	U1204	224-00139-01A	FILTER; 4.5 MHZ CERAMIC BANDPASS;
C	W43	063-10243-38	RESISTOR; FILM; 39 OHM 5% 1/2W
ABD	W43	063-10243-40	RESISTOR; FILM;
ABCD	WT1210	175-02770	TUNER; VARACTOR, 181 CHANNEL, S; WORLD STANDARD
ABCD	X2200	224-00178	RESONATOR; CERAMIC, 503 KHZ;
ABCD	X2201	224-00027-01A	CRYSTAL; QUARTZ; 3.58 MHZ

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RC	REF	PART#	DESCRIPTION
ABCD	ZD1403	103-00279-18A	DIODE; ZENER; 9.1V 0.5W
ABCD	ZD1404	103-00279-18A	DIODE; ZENER; 9.1V 0.5W
ABCD	ZD2901	103-00279-18A	DIODE; ZENER; 9.1V 0.5W
ABCD	ZD3201	103-00279-27A	DIODE; ZENER; 18V 0.5W
ABCD	ZD3402	103-00279-36A	DIODE; ZENER; 33V 0.5W

RC	REF	PART#	DESCRIPTION

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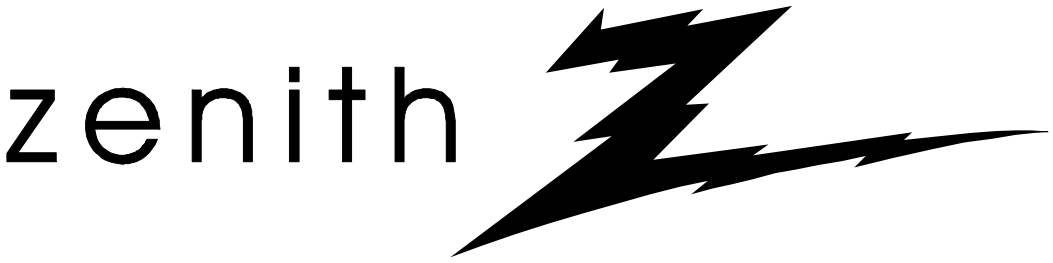
zenith